

21th Wellmann International Scientific Conference

Each year the Wellmann International Scientific Conference is organised by the University of Szeged Faculty of Agriculture, Hódmezővásárhely in cooperation with other partners (Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timișoara, Faculty of Agricultural Management, Timișoara (Romania), Hungarian Academy of Sciences Regional Committee in Szeged and Foundation for Agricultural Modernization and Rural Development, Hódmezővásárhely). On April 21 2024 the 21st conference entitled "Global challenges & responses in agriculture and environment" took place in Hódmezővásárhely.

The conference started with the plenary sessions. In the first session a presentation on the "Relation between agrobiodiversity, water availability and microclimate characteristics in the Oases of Kebili, Tunisia" was held. The speakers gave an overview of the conservation and the agro-biodiversity levels within oases in Tunisia and the ability of these unique ecosystems to confront climate change threats.

In the second plenary session the topic "Technological challenges and paradigm shifts in wastewater treatment and sludge utilization" was addressed. Dr. Sándor Beszédes explained the need for efficient wastewater purification technologies and how conventional wastewater treatment technologies cannot remove some pollutants, necessitating the development of novel and more efficient processes. Some recommendations were given for regenerated wastewater technologies as an alternative water resource, ensuring water availability while reducing pressure on water bodies.

In the third plenary session, the presentation of Dr. Béla Halasi-Kovács focused on the "Environmental challenges of European freshwater aquaculture and possible answers to be given on policy level". During his intervention it was highlighted how pond farming, despite its social, economic, and environmental benefits, faces challenges due to climate change, including decreasing renewable water resources, increasing water blooming, and emerging pathogens. This affects the non-specific immune status of farmed fish species. He recommended that lessons from traditional low trophic pond aquaculture can be used in developing circular bio-based farming in the EU. Also, it was emphasized that focused research and innovation can lead to sustainable, competitive, and resilient production, while consistent and complex policies based on the blue bioeconomy can be implemented.

The event continued with the poster session where presenters had the opportunity to expose orally their research work for one hour. There, two PhD students from The Doctoral School of Environmental Sciences of MATE (Hungarian University of Agriculture and Life Sciences) got the chance to present the subject of their posters. The poster of Gabriella Hajagos focused on measuring microclimate regulation of steppe wood vegetation in Central Hungary while the poster of Örs Ábrám showed the changes in the ecological status of the Böddi-szék soda pan in a decade.

Parallel sessions took place from 2 pm to 5.30 pm covering several topics: a) Agricultural production I. b) Agricultural production II, c) Agricultural economics, Food processing & safety, d) Environmental protection, Forestry, Nature conservation, Wildlife management, and e) Innovation in agriculture, Rural & sustainable development.

Some PhD students from MATE participated in the Environmental protection, Forestry, Nature conservation, and Wildlife management sessions.

The presentation's topics were:

- a) Frequency and abundance changes of wild boar rooting in Vöröskővár, Budapest, Hungary (Figure 1 and 3, Natalia Pitta-Osses)
- b) How does nature conservation citizen science impact policy and decision-making? A review (Figure 2 and 3, Johanna Soria Aguirre)



Figure 1 Natalia Pitta Osses presenting her PhD topic at the 21th Wellmann International Scientific Conference in 2024, Hódmezővásárhely, Hungary



Figure 2 Johanna Soria Aguirre presenting her PhD topic at the 21th Wellmann International Scientific Conference in 2024, Hódmezővásárhely, Hungary

- c) Use of camera traps to monitor human-wildlife interactions around the Nairobi National Park - Kenya (Figure 3, Jocelyn Weyala Burudi)

In conclusion, given the pressing challenges posed by nature's decline and climate change, it is imperative to prioritize science-based actions and research initiatives that foster collaboration between new and experienced researchers and facilitate the exchange of ideas.



Figure 3 Participants of the Hungarian University of Agriculture and Life Sciences (left to right: Natalia Pitta Osses, Jocelyn Weyala Burudi, Johanna Soria Aguirre) at the 21st Wellmann International Scientific Conference in 2024, Hódmezővásárhely, Hungary

Throughout the presentations, the theme of collaborative work emerged many times, transcending the diversity of topics discussed. Many presenters emphasized the importance of collaboration among academia, society, practitioners, and researchers.

Such partnerships not only broaden the knowledge base in conservation and agriculture but also enhance our collective capacity to address environmental challenges effectively.

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