



UNIVERSITY OF
HOHENHEIM



Hochschule für
Wirtschaft und Umwelt
Nürtingen-Geislingen



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Banat Green Deal
Education and Research in the context of the digital and ecological transformation of agriculture in the Banat Region and Baden-Württemberg - towards resource efficiency and resilience

The Course “**Agriculture in Responsibility for our common World**” organised within the frame of the **BanatGreenDeal Project** (www.scoalaagricola.eu, www.greenerde.eu) organised and delivered between June 2021 and March 2022 targets the knowledge and experience transfer to the farmer community in the Banat Region, Romania and other parts of the world. Current and future challenges, such as the ecological conversion and digital transformation of agricultural production, but also social, economic and cultural aspects will be addressed transcending prevailing patterns. The innovative and relevant knowledge originating from practice, experiments, research or development projects throughout Europe is deployed in a training format to the interested participants. Considering the limitations of the pandemic situation of COVID-19, the training format is shaped as hybrid blended learning delivering the first modules online using a tested and verified web platform for that purpose. When the conditions allow, the participants continue the remaining modules by direct face-to-face activity. Nevertheless, in parallel the sessions are still broadcasted and recorded to enable the access or later use by the trainees.

The structure of the course comprises eight topical modules organised as following:

Module 1&2, delivered online (3rd tier of June 2021) cover topics of **Current and future challenges for a socially, ecologically and economically sustainable agriculture** incorporating sessions in: Agriculture in Germany and Baden-Württemberg, Overview of the Romanian Agriculture, The Global Situation: Agriculture in the Ecological and Cultural Crisis, Resilience and farming under climate change – adapted varieties and crop management, structural issues/evolution and perspectives RO/DE/EU, and **Soil Fertility and Water purity: precious goods at risk**, touching: The taxonomy and main soils in Romania, Climate change impact on soil fertility, The role of Soil Life for Soil Fertility, Biological Approaches, Responsible soil and water management, (soil and water related technologies oriented towards soil (structure) preservation, humus management, low input technologies), Crop rotation and Soil Fertility, Microbiology, Agricultural pollutants and water purity/quality, The biological activity of the soil in ensuring a sustainable agriculture, Compost and Soil Organic Matter, Organic Farming and Soil Fertility.

Module 3, introduces the **Ecological Conversion of Agriculture: Changes and Challenges in Plant Nutrition and Protection** (2nd tier of July 2021) and includes sessions in: Integrated and biological plant protection and weeds control, Biological Agents for Crop Protection, Urban Gardening and Plant Protection without Pesticides, Traditional and innovative plant health maintenance, Field testing of chemical and biological agents, Plant Protection in Horticultural



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Production Systems, Plant Protection and Mineral Nutrition in Viticulture, Plant Protection in Viticulture and Horticulture with less Agrochemicals, Plant Nutrition and Resistance of Crop Plants, A dynamic fertilization for sustainable agriculture, Organic farming - actions, challenges and perspectives, The role of crop rotations in the control of weeds, diseases and pests in agricultural crops, Agrotechnical methods of control of weeds, diseases and pests in agricultural crops, Safe application of plant protection products.

Module 4 on Soil Cultivation: Connecting Biodiversity and Climate Change Mitigation and Adaptation (2nd tier of September 2021) covers: Soil cultivation and seeding, no tillage systems and technique, minimum tillage, strip tillage/ target, Adaptation of Crop Plants to drought, cold and inadequate mineral nutrient availability in soils, Genetic and Epigenetic adaptation of Crop Plants to adverse environmental conditions, Climate change and land, Impact of the climate change on biodiversity, Integrating climate change attenuation and adaptation in plant culture, Specific crop technologies with the role of reducing the impact of the climate change, The climate change influence of the crops physiology.

Module 5 introduces the **Digitalization of Agriculture: Rationality and Risks** (2nd tier of November 2021) integrating sessions in: Digitalization and Ethics, Basics for digital farming: concept of smart farming, guidance systems and farm management, Field-Robotics for Soil Sampling and Analyses, Digitalisation in land cadastre, Optimization of agricultural production processes through Smart Farming, Digitization of farm and off-farm activities, Best Apps Selection for farmers.

Module 6 concentrates on **Global Integration of Agriculture: Social and Geographic Networking** (3rd tier of January 2022) with sessions dealing with: Benefits of the forest belts in landscape and crop protection, Possibilities for improving of the degraded farmland, Information and elaboration of application maps (site specific plant protection and fertilisation), Precision Agriculture: Global Positioning System (GPS), Geospatial methods for collecting the data, GIS for agriculture, Monitoring the crops by using remote sensing images.

Module 7 covers the topic of **School of Agriculture and Life: Sharing Knowledge and Innovations** (2nd tier of February 2022) with insights over: Sharing Knowledge and Innovation - Education and practical training in the context of digital and ecological transformation of agriculture in the Banat / Digital and ecological transformation of agriculture - experiences from and for training and knowledge transfer, The Agricultural Knowledge and Innovation System (AKIS): Inspirational ideas to adequately meet local and global needs, Romanian AKIS and knowledge brokerage in the Romanian rural. Equally it delivers a Vocational training seminar and experience exchange (input and workshops).

Module 8 introduces the **Integrated Crop Management and Digitalization** (2nd tier of March 2022) with Machines and equipment for organic farming, delivering a wide selection of Applications validated by the Wisefarmer project (wisefarmer.eu), and the impact of Paired Online learning as blended form of training.



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The trainers and the experts delivering the sessions. The participants accomplishing the Course modules will receive a Training Certificate issued by the Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara; Romanian-German Training Center for Agriculture Voiteg, DEULA Baden-Württemberg gGmbH, Madora GmbH, University of Nürtingen-Geislingen and University of Hohenheim. The participants acquire top-of-the-art knowledge in all the domains covered by the modules and sessions enabling them to develop and project new perspectives and approaches in their farming activities and in the interactions with the wider farming community with accent on current trends and threads proving higher awareness as result of the received training and information.

Involved Institutions and Countries of Origin:

1. Banat's University of Agricultural Sciences and Veterinary Medicine "King Michael I of Romania" from Timisoara, Romania
2. BASF-Agrarzentrum Limburgerhof, Germany
3. CREA (Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria), Italy
4. CZU (Česká zemědělská univerzita, Tschechische Agraruniversität), Czech Republic
5. Department of Environmental Science, Policy, & Management, UC Berkeley, California, USA
6. IBLA (Institute for Biological Agriculture Luxembourg), Luxemburg
7. Institute for science application in agriculture, Belgrade, Serbia
8. Julius Kühn-Institut – Bundesforschungsinstitut für Kulturpflanzen (JKI) is the German Federal Research Centre for Cultivated Plants, Germany
9. Nürtingen-Geislingen University (German: Hochschule für Wirtschaft und Umwelt Nürtingen-Geislingen), Germany
10. ÖMKi (Ökológiai Mezőgazdasági Kutatóintézet, Ungarisches Forschungsinstitut für Organische Landwirtschaft), Hungary
11. Ostbayerische Technische Hochschule Regensburg (OTH Regensburg), Germany
12. University Belgrad, Serbia
13. University of Hohenheim, Germany
14. University of Veterinary Medicine Budapest, Hungary
15. University Prishtina, Republic Kosovo