

**Faculty of Agriculture
Goce Delcev University - Stip**



**3rd INTERNATIONAL MEETING
AGRISCIENCE & PRACTICE
(ASP 2023)**

BOOK OF ABSTRACTS

19-20th April 2023

Stip, Republic of North Macedonia

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**3rd INTERNATIONAL MEETING AGRISCIENCE & PRACTICE
ASP 2023**

Organized by

**FACULTY OF AGRICULTURE
GOCE DELCEV UNIVERSITY - STIP, REPUBLIC OF NORTH MACEDONIA
19-20 April 2023, Stip, Republic of North Macedonia**

Faculty of Agriculture organizes the 3rd International Meeting Agriscience & Practice (ASP 2023), giving an opportunity to the participants for presentation and discussion of original scientific and practical results in different fields of agriculture.

The 3rd International Meeting Agriscience & Practice (ASP 2023) is organized with an intention to bring together all agricultural stakeholders for sharing their knowledge, experience and obstacles. One of the main aims is to link research and field work in agricultural sector in the country and broader, giving it an international dimension.

The main goal of the Meeting was to connect and promote scientific achievements and practical knowledge presented in different thematic areas.

The scientific and applicative presentations are conducted in sections: 1. Agricultural economics, 2. Plant biotechnology, 3. Plant production, 4. Plant protection, 5. Quality control and food safety, 6. Soil science and hydrology 7. Viticulture, enology and fruit production, with a possibility for oral or poster presentation. Nevertheless, the needs of the agricultural sector entail organization of panel discussions, where invited speakers and panelists have a possibility to share their experience with the Meeting participants.

Dear colleagues, let's again gather together in one place with one joint idea - to combine agricultural science and practice with a purpose to share information, knowledge, experiences and solutions to exceed the problems. The main objective of this Meeting is successful establishment of continuous and valid communication and collaboration among scientific, research and practical activities in agriculture sector in our country, neighboring countries and broader international level. We will achieve the main goal of the Meeting as well as our common objective only by virtue of synergic connections on which we have been working intensively in the past years.

Every science has its significance and value in the given social context, but agricultural production has a special place of vital significance.

“Only one who knows the way of food movement, from field to table, really respects it”.

With great joyfulness we thank you for active participation in the Meeting!

Prof. d-r Emilija Arsov

**Dean of Faculty of Agriculture
&
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PLENARY PRESENTATIONS

REDUCING GREENHOUSE GAS EMISSIONS IN AGRICULTURE: CHALLENGES AND POSSIBILITIES Biljana Balabanova^{1*}, Verica Ilieva¹, Sasa Mitrev¹

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Abstract

Global agriculture is affected by climate change that could significantly impact productivity. Large-scale afforestation and biomass for energy production as well as population and income growth, will exacerbate the competition for land. Agriculture is an important contributor to climate change, accounting directly for 10%–12% of anthropogenic greenhouse gas (GHG) emissions and also for around 70% of land use change emissions, mainly through deforestation. Soil acts as source and sinks for greenhouse gases (GHG) such as carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O). Microbial activity, root respiration, chemical decay processes, as well as heterotrophic respiration of soil fauna and fungi produce GHGs in soils. Related emission flux rates largely depend on soil water content (humidity), soil temperature, nutrient availability, and pH value, plus land-cover-related parameters. Thus, meteorological and climatological parameters, as well as land-use management information, are paramount. Drivers can be separated into proximal drivers that influence soil emissions in the direct environment and distal drivers that effect soil emissions on larger scales. Considering the present study, we include the use of the following models: a) spatially explicit model of land-use choices to determine the possible effects of future changes in the drivers of land-use choices; and b) crop model - model that estimates spatially explicit profiles of GHG emissions from cropland with varying crop genetic productivity shifters, management systems, and climate scenarios.

Keywords: *soil emissions, greenhouse gases, climate change.*

Acknowledgment: Authors express their acknowledgment to the project: Carbon Initiative for Climate-resilient Agriculture – CARBONICA, Funded by the European Union.

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