

**FACULTY OF AGRICULTURE  
GOCE DELCEV UNIVERSITY, STIP**



**4<sup>th</sup> INTERNATIONAL MEETING  
AGRISCIENCE & PRACTICE  
(ASP 2024)**

**BOOK OF ABSTRACTS**

**July 2024  
Stip, Republic of North Macedonia**



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**4<sup>th</sup> INTERNATIONAL MEETING AGRISCIENCE & PRACTICE  
ASP 2024**

**Organized by**

**FACULTY OF AGRICULTURE  
GOCE DELCEV UNIVERSITY, STIP, REPUBLIC OF NORTH MACEDONIA  
13 June 2024, Stip, Republic of North Macedonia**

Faculty of Agriculture organizes the 4<sup>th</sup> International Meeting Agriscience & Practice (ASP 2024), giving an opportunity to the participants for presentation and discussion of original scientific and practical results in different fields of agriculture.

The 4<sup>th</sup> International Meeting Agriscience & Practice (ASP 2024) 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 abroad, 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 poster presentation. Nevertheless, the needs of the agricultural sector entail organization of plenary presentation on the most actual topic in the field of agriculture and panel discussions, where invited speakers and panellists 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 on 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.

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

**Emilija Arsov, PhD**

**Dean of the Faculty of Agriculture  
&  
Chair of the Organizing Committee**

**July, 2024, Stip, Republic of North Macedonia**

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# **QUALITY CONTROL AND FOOD SAFETY**

**BIOACCUMULATION OF HEAVY METALS IN FRUIT OF SOME NEW TOMATO HYBRIDS**

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**Abstract**

In our study the focus was on determining the level of toxic heavy metals such as Pb, Mo, Cd and Hg in tomato fruit at one commercial hybrid - Adriatic F1 and nine new hybrids grown under identical conditions in greenhouse. Depending on their concentration and capacity for bioaccumulation, they can provide a range of health risks. The concentration of heavy metals in the research was determined by flame atomic absorption spectrophotometry. Average concentrations of heavy metals varied in factors from hybrid, the lowest concentration of lead (11.96 µg/kg), molybdenum (26.25 µg/kg) and cadmium (7.41 µg/kg) and mercury (0.86 µg/kg), is found in the hybrid marked as 140, while the highest concentration of cadmium (39.23 µg/kg) in the hybrid 116, while the maximum concentration of lead (40.99 µg/kg), molybdenum (96.64 µg/kg) and mercury (3.08 µg/kg) was measured in the commercial hybrid Adriatic F1. Pearson's correlation coefficient showed that there is a strong positive correlation between molybdenum and mercury (r 0.83), and a medium-strong positive correlation between molybdenum and lead (r 0.69), mercury and cadmium (r 0.52) and mercury and lead content (r 0.64) in fruit. The obtained results suggested that the increase of the metal concentration in tomato fruits can be conditioned by the genetic predispositions of the plants.

**Key words:** tomato, heavy metals, bioaccumulation.

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