

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



**4th INTERNATIONAL MEETING
AGRISCIENCE & PRACTICE
(ASP 2024)**

BOOK OF ABSTRACTS

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

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**4th 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 4th 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 4th 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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BOOK OF ABSTRACTS
SECTION: PLANT PROTECTION

STROBILURINS – QUINONE OUTSIDE INHIBITORS: DEVELOPMENT, APPLICATIONS, AND RESISTANCE Biljana Kovacevik^{1*}, Sasa Mitrev¹, Emilija Arsov¹, Natalija Markova Ruzdik², Daniela Todevska²

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Abstract

Strobilurins are a class of fungicides mostly derived from natural substances produced by wood-decaying mushrooms, particularly from the genus *Strobilurus*. The discovery of strobilurins dates back to the 1970s when researchers identified their unique fungicidal properties. This discovery led to the synthesis of various strobilurin analogs. Thanks to their broad-spectrum activity and relatively low toxicity to humans and animals, strobilurins have become some of the most widely used fungicides globally. They are effective against a wide range of fungal pathogens, including those causing powdery mildew, rusts, leaf spots, and blights, and are used in various crops such as cereals, field crops, fruits, tree nuts, vegetables, turfgrasses, and ornamentals. These fungicides exhibit systemic properties, meaning they can be absorbed by plant tissues and translocated throughout the plant, which provides protection to both treated and new growth, enhancing their effectiveness in disease management. Strobilurins are compatible with many other agricultural chemicals, including insecticides and herbicides, allowing them to be integrated easily into existing pest management programs. This compatibility facilitates their use in tank mixes, reducing the number of applications needed and saving time and resources for farmers. In some cases, they are also found to enhance plant growth. In this review, the properties of strobilurins such as their synthesis, biochemical mode of action, fungicidal activity, resistance risk, and human and environmental safety are discussed in detail.

Key words: fungicides, natural substances, *Strobilurus* spp., plant protection, synthesis, mode of action, fungicidal activity, resistance, toxicity.