

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



**1<sup>st</sup> INTERNATIONAL MEETING  
AGRISCIENCE & PRACTICE (ASP 2018)**

**BOOK OF ABSTRACTS**

**10<sup>th</sup> - 11<sup>th</sup> May 2018  
Stip, Republic of Macedonia**

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**Organized by**

**FACULTY OF AGRICULTURE  
GOCE DELCEV UNIVERSITY - STIP, REPUBLIC OF MACEDONIA  
10-11 May 2018, Stip, Republic of Macedonia**

In the past ten years the educational, research and applicative activities of the Faculty of Agriculture – Stip, Goce Delcev University – Stip, contributed to the development of agriculture sector in the country and broader region.

The Faculty of Agriculture organizes the 1<sup>st</sup> International Meeting Agriscience & Practice (ASP 2018), giving an opportunity to the participants for presentation and discussion of original scientific and practical results in different fields of agriculture.

The 1<sup>st</sup> International Meeting Agriscience & Practice (ASP 2018) is organized with 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 is to connect and promote scientific achievements and practical knowledge presented in different thematic areas.

We are pleased to welcome you at the Faculty of Agriculture and we wish you active participation in the Meeting.

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**SECTION: PLANT BIOTECHNOLOGY**

**APPLICATION OF PHYTOHORMONES IN IMPROVEMENT OF AGRICULTURAL AND HORTICULTURAL SPECIES IN IN VITRO AND IN VIVO CONDITIONS** Liljana Koleva Gudeva<sup>1\*</sup>, Fidanka Trajkova<sup>1</sup>

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**Abstract**

There are many areas in agriculture, and particularly horticulture, where phytohormones can be used in successful cultivation for obtaining higher yield and improvement of plant species. The methods of plant biotechnology have crucial role in plant improvement, where the role of phytohormones is irreplaceable. The method of *in vitro* cultivation of plant cell and tissue cultures is used for vegetative propagation or micropropagation of plants. The vegetative propagation of the plants in *in vitro* conditions enables to reduce the process of selection, enhance the genetic stability of plants and improve the production of healthy plants free of viruses. These powerful methods of plant biotechnology are unusable without the application of phytohormones and plant growth regulators. The interaction between plant varieties and different phytohormone concentrations are highly significant for successful micropropagation, as well as any kind of plant improvement in *in vitro* and *in vivo* conditions. The application of phytohormones, especially auxins as growth regulators, in nursery rooted production is used to increase the number of seedlings and plants, to shorten the rooting time, to increase the root number per plant and uniformity of the root system. This paper presents an overview of the application of phytohormones and plant growth regulators in the improvement of agricultural and horticultural species in plant tissue culture in *in vitro* conditions, as well as their applications in *in vivo* conditions.

**Key words:** plant growth regulators, plant tissue culture, auxins, cytokinins, gibberellins