

University of Ss. Cyril and Methodius in Trnava

Faculty of Natural Sciences

The 9th International Scientific Conference  
Applied Natural Sciences 2025



**ANS 2025**

Book of abstracts

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17<sup>th</sup> – 19<sup>th</sup> of September 2025  
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University of Ss. Cyril and Methodius in Trnava

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2. Biology and Biotechnology
3. Environmental Sciences
4. Chemistry
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## FOREWORD

Dear Colleagues, Dear Guests,

It is my great pleasure to welcome you to the **9th International Scientific Conference *Applied Natural Sciences* 2025**. Over the past years, this conference has become an important forum for scientists, researchers, and students to exchange ideas, present new findings, and strengthen collaborations across disciplines.

This year, we are honored to host participants from many countries, whose contributions span a wide range of fields – from biology and biotechnology to chemistry, environmental sciences, and informatics. The diversity and quality of the submitted abstracts reflect not only the progress made in applied natural sciences, but also the enthusiasm and dedication of the scientific community to address current and future challenges.

I would like to extend my sincere thanks to all authors for their contributions, to the keynote speakers for sharing their expertise and vision, and to the Organising Committee for their tireless work in making this event possible. My gratitude also goes to our partners and supporters, without whom this conference would not be possible.

I believe that the *Book of Abstracts* you now hold in your hands will serve not only as a record of the scientific discussions held here in **Štrbské Pleso**, but also as an inspiration for future research and cooperation.

I wish you a fruitful conference, stimulating discussions, and many enjoyable moments during your stay in the High Tatras.

With best regards,

**Assoc. Prof. Iveta Dirgová Luptáková, PhD.**  
Dean  
Faculty of Natural Sciences  
University of Ss. Cyril and Methodius in Trnava

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## Determination of microbial isolates from two different composts and the evaluation of their potency to stimulate the growth of tomato

**Michaela Murgašová\*, Vladimíra Krempaská, Terézia Beck, Janka Ševčíková,  
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**Abstract:** Composting is an aerobic process consisting of several phases, producing a stable and mature fertiliser. The first compost analysed in this study originates from the municipal composting plant, which serves for decomposition of kitchen waste, while the second compost is being commercially sold. The aim of this study was to isolate bacteria promoting plant growth from both composts. Samples from composts were incubated at 25 °C in various liquid cultivation media. Subsequently, selected colonies were inoculated onto fresh solid media and the bacterial composition of both composts was analyzed by MALDI TOF-MS after protein extraction. We were able to isolate several interesting bacterial species including *Lysinibacillus xylanilyticus* and *Solibacillus silvestris* from municipal compost. *Pseudomonas citronellolis* and *Pseudomonas stutzeri* were isolated from the commercially sold compost. These isolates have traits that are specific for plant-growth promoting bacteria or they can serve as biocontrol agents against infections causing many plant diseases. Isolates with these traits can thus significantly facilitate the growth, development or immunodefence of tomato (*Solanum lycopersicum* L.).

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**Keywords:** compost, bacterial isolates, MALDI TOF-MS, tomato

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