

University of Ss. Cyril and Methodius in Trnava

Faculty of Natural Sciences

The 9th International Scientific Conference

Applied Natural Sciences 2025



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17th – 19th of September 2025
Štrbské Pleso, Slovakia

University of Ss. Cyril and Methodius in Trnava

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2. Biology and Biotechnology
3. Environmental Sciences
4. Chemistry
5. Young Scientists

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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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Bacterial inhabitants of wood-decay fungi basidiocarps

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Abstract: Various bacteria were isolated from 14 basidiocarps of wood-decay fungi collected from June to September 2023 in selected locations in Slovakia (Oravské Veselé village, Banská Bystrica city, and a mixed forest in Vrútky city). Fungi were identified by combination of morphological traits and ITS spacer region sequence analysis, bacteria were identified by MALDI-TOF MS. To detect the cellulolytic ability of bacterial isolates, the Congo-Red Staining method with carboxymethyl cellulose medium was used. Highly variable populations of bacteria were detected in all basidiocarps with predominance of *Pseudomonas* spp. Most basidiocarps (9) were identified as *Phellinus igniarius*, from which multiple *Pseudomonas* spp. including *P. extremorientalis*, *P. synxantha*, two *Achromobacter* spp., *Bacillus pumilus*, *B. subtilis*, *Enterobacter asburiae*, *E. bugandensis*, *Ewingella americana*, *Lelliottia amnigena*, *Serratia liquefaciens*, and *Stenotrophomonas* sp. were isolated. From *Trametes versicolor* basidiocarps, *Ochrobactrum* sp. and *Lelliottia amnigena* were isolated; from *Trametes gibbosa*, *Bacillus* sp., *Bacillus subtilis*, *Lysinibacillus fusiformis*, two *Pseudomonas* spp., and *Stenotrophomonas* sp.; from *Trametes hirsuta*, three different *Pseudomonas* species and *Raoultella terrigena* were isolated. In *Fomitopsis betulina*, two *Bacillus* spp. and *Sporosarcina* sp. were detected. Cellulolytic activity was observed in bacteria belonging to the *Pseudomonas*, *Bacillus*, and *Achromobacter* genera. The possible role of fungi-bacteria symbiosis in wood-decay is discussed.

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Keywords: basidiocarps, cellulolytic bacteria, ITS, MALDI-TOF MS, *Pseudomonas* spp., wood-decay fungi



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