



the **19**<sup>th</sup> INTERNATIONAL CONFERENCE  
LIFE SCIENCES FOR  
SUSTAINABLE DEVELOPMENT

24<sup>th</sup> - 25<sup>th</sup> September 2020, Cluj-Napoca, Romania

# BOOK OF ABSTRACTS

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# **IMPRESSUM**

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**under the patronage of Romanian**

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Organize

## **THE 19<sup>th</sup> INTERNATIONAL CONFERENCE "LIFE SCIENCES FOR SUSTAINABLE DEVELOPMENT"**

24<sup>th</sup> – 25<sup>th</sup> of September 2020  
Cluj-Napoca, Romania

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## WELCOME MESSAGE

We are pleased to welcome you to the 19<sup>th</sup> International Conference "Life Sciences for Sustainable Development", Romania to share our scientific performance and progress during this special scientific event.

The University of Agricultural Sciences and Veterinary Medicine of Cluj-Napoca, classified in the first category of "advanced research" universities of Romania, place also confirmed by the European University Association (EUA). The University becomes nowadays one of the most prestigious academic institutions from Romania.

The 19<sup>th</sup> International Conference "Life Sciences for Sustainable Development" is a dynamic forum of exchanges for scientific experiences, innovative ideas and concepts, future prospects in agriculture, plant and animal science, food science and technology, biotechnology, veterinary medicine, as well in other interdisciplinary and transdisciplinary areas.

The 19<sup>th</sup> International Conference "Life Sciences for Sustainable Development" includes invited conferences, presented by known international and national personalities, oral and poster presentations, where recent advanced scientific and technical results can be seen, especially now, in the context of the new European Research Program "Horizon 2020" and of the national Research – Technological Development and Innovation Program, related to Life Sciences.

The conference programme will consist of ten main sessions:

1. Agriculture
2. Environmental Protection
3. Food Science and Technology
4. Horticulture and Forestry
5. Economics and Rural Development
6. Animal Science
7. Biotechnology
8. Veterinary Medicine - Fundamental and preclinical sciences
9. Veterinary Medicine - Clinical sciences
10. Geodesy, Geomatics and Property Valuation

The participants registered to our conference have the opportunity not only to present their results, published as summary in the "Book of Abstracts" but also to publish in extenso their contributions. The oral presentations, after a previous peer review process, can be published in the journal Bulletin of UASVM-CN – Agriculture, Horticulture, Animal Science-Biotechnology, Veterinary Medicine and Food Science and Technology.

"Book of Abstracts" contain abstracts submitted by participants from different countries. We wish to thank all participants and organizers for making this virtual meeting possible.

With best wishes,

Prof. Cornel CĂTOI, PhD  
Rector

Prof. Dan C. VODNAR, PhD  
Vice-rector for Research

## **ANNOTATION**

**The abstracts and contact information are submitted by the main authors.  
Each author explicitly confirms that the abstract meets the ethical standards for authors  
and coauthors.**

## ANTIPARASITIC EFFECT OF SOME ACTIVE COMPONENTS OF ESSENTIAL OILS

Djordje MARJANOVIC<sup>1</sup>, Nemanja ZDRAVKOVIC<sup>2\*</sup>, Marija PAVLOVIC<sup>2</sup>, Ksenija NESIC<sup>2</sup>, Radoslava SAVIC-RADOVANIVOC<sup>1</sup> and Sasa TRAILOVIC<sup>1</sup>

<sup>1</sup> University of Belgrade, Faculty of Veterinary Medicine, Belgrade, Serbia

<sup>2</sup> Veterinary Institute of Serbia, Janisa Janulisa 14, Belgrade, Serbia

\*Corresponding author, e-mail: [nemanja.zdravkovic@nivs.rs](mailto:nemanja.zdravkovic@nivs.rs)

**Introduction:** Modern antiparasitic pharmacotherapy faces several important challenges. An increasing number of reports refer to the resistance of parasitic nematodes to conventional antiparasitic drugs, while dose increasing manifests their toxicity. Particularly important for veterinary medicine is the fact that most antiparasitic drugs require a long withdrawal period after application in animals whose tissues are intended for human consumption.

**Aims:** To examine the potential antinematodic effect of selected monoterpenoid and diterpenoid active principles of essential vegetable oils and determine the mechanism by which they achieve antiparasitic effects.

**Materials and Methods:** Investigation of the interaction of active principles of essential vegetable oils with cholinergic and GABA-ergic nematode receptors on neuromuscular preparation *Ascaris suum* and *Caenorhabditis elegans* culture.

**Results:** The terpenoids alpha-pinene, p-cymene, carveol, carnosol and cinnamaldehyde do not show any pharmacological effects on the contractions of the neuromuscular preparation *A. suum*. The monoterpenoid carvacrol exhibits the properties of the competitive / non-competitive nicotinic acetylcholine receptor (nAChR) antagonist *A. suum* and effectively and significantly inhibits neuromuscular contractions caused by increasing acetylcholine concentrations. - carvacrol does not alter the EC50 value of acetylcholine The tested active principles of essential oils in our tests showed a specific and unique mechanism of action that potentially enables them high efficacy, even in nematodes resistant to classical anthelmintics.

**Conclusion:** Based on our results, carvacrol, carveol, menthol and thymol are very serious candidates for independent use in antinematode therapy or use in combination with drugs agonists of GABA receptor nematodes.

**Keywords:** *Ascaris suum*, *Caenorhabditis elegans*, GABA