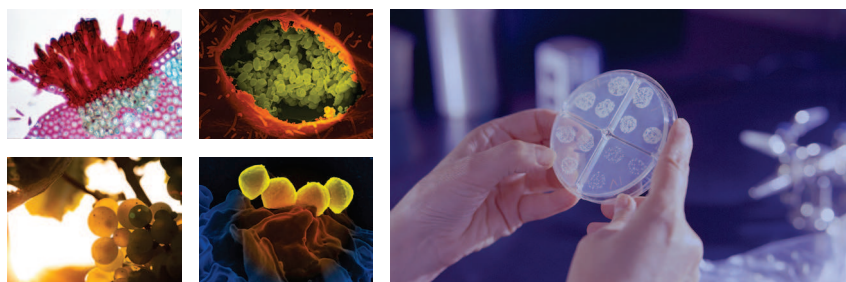




**POWER OF  
MICROBES**  
IN INDUSTRY AND ENVIRONMENT 2023

# Book of Abstracts

---



May 15-18, 2023 | Valamar Diamant Hotel, Poreč, Croatia

Power of Microbes  
in Industry and Environment

**BOOK OF ABSTRACTS**

May 15 – 18, 2023  
Poreč, Croatia

**Publisher**

Croatian Microbiological Society

Pierottijeva 6, HR-10000 Zagreb, Croatia

[www.hmd-cms.hr](http://www.hmd-cms.hr)

**For publisher**

Roberto Antolović

**Editors**

Renata Teparić

Andreja Leboš Pavunc

Domagoj Kifer

**ISBN 978-953-7778-19-4**

**Organised and hosted by**

Croatian Microbiological Society



**Co-organised by**

Czechoslovak Society for Microbiology



Hungarian Society for Microbiology



Slovenian Microbiological Society



Turkish Society of Microbiology



**Supported by**

Croatian academy of Engineering



## Supported by

Faculty of Food Technology and Biotechnology,  
University of Zagreb

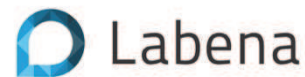


Federation of European Microbiological Societies (FEMS)



## Gold sponsor

Labena



## Silver sponsors

Avantor



Diagnostica Skalpeli



Kemolab



## Silver sponsors

Medic



Vita Lab Nova



## Bronze sponsors

AlphaChrom



A&B



Gorea plus



Jasika



Selvita



### **Organising Committee**

Renata Teparić, president

Andreja Leboš Pavunc, secretary

Marina Svetec Miklenić, treasurer

Domagoj Kifer

Mirna Mrkonjić Fuka

Ines Sviličić Petrić

Bojan Žunar

### **International Scientific Committee**

Vladimir Mrša, president (Croatia)

Anna Maraz (Hungary)

Marjanca Starčić Erjavec (Slovenia)

Michael Sauer (Austria)

Helena Bujdakova (Slovakia)

Branka Vasiljević (Serbia)

# CONTENTS

Presidents' foreword .....	9
General information .....	10
Programme.....	11
Invited lectures.....	17
Oral presentations.....	33
Poster presentations .....	57
Tribune lectures.....	123
Sponsor lecture .....	131
List of authors .....	135





## PRESIDENTS' FOREWORD

Dear colleagues and friends,

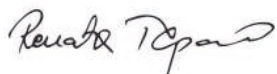
It is our great pleasure to welcome you at the symposium "Power of Microbes in Industry and Environment 2023", held in Poreč, Croatia from May 15<sup>th</sup> to May 18<sup>th</sup> 2023.

This symposium which covers all important topics of applied microbiology is already the seventh in a row, starting with the meeting in Opatija in 2002 and followed by the symposia in Zadar in 2007, Malinska (island Krk) in 2010, Primošten in 2013, Krk in 2016 and Sv. Marti na Muri in 2019. Like the previous meetings, the one this year is organized by the Croatian Microbiological Society in collaboration with the Czechoslovak Society for Microbiology, Hungarian Society for Microbiology, Slovenian Microbiological Society and Turkish Society of Microbiology. The symposium is held with the support of the Federation of European Microbiological Societies (FEMS), Faculty of Food Technology and Biotechnology, and Croatian academy of Engineering.

The experience of the past meetings motivated our efforts to continue with this series with a clear tendency to strengthen the scientific connections among research groups of neighbouring countries. Following the tradition established by the previous meetings, "Power of microbes 2023" will cover hot topics in the fields of applied microbiology and biotechnology, thus creating multidisciplinary background and bringing together scientists from all research environments, including academia, research institutes and industry. We strongly believe that "Power of microbes 2023" is an excellent place to exchange and combine scientific ideas among the experts and participants with great possibilities to start the new international collaborations and common scientific projects. In addition to the lectures of the invited speakers, the programme includes presentations of a number of young scientists and PhD students, many of which are supported by FEMS grants. We thank all participants for their scientific involvement that will significantly contribute to the success of "Power of microbes 2023".

We hope that you will enjoy the programme of the "Power of microbes 2023" and find it stimulating and informative. We also hope that you will enjoy the beauty of Istria county and Croatian hospitality. Last but not least, we wish that the "Power of microbes 2023" will continue to be the place to revive the old and form the new friendships.

Renata Teparić



President of the Organising  
Committee

Vladimir Mrša



President of the International  
Programme Committee

## **GENERAL INFORMATION**

### **SYMPOSIUM VENUE**

The meeting is held at the congress centre of the Valamar Diamant Hotel 4\*, Brulo 1, HR-52440, Poreč, Croatia. Phone: +385 52 400 000.

### **REGISTRATION OF PARTICIPANTS**

Registration desk will be opened on Monday, May 15 from 14:00 to 15:00, as well as on Tuesday, May 16 from 08:30 to 09:00 in front of the Magnolia congress hall, Valamar Diamant Hotel. Daily updates on the symposium sessions and social events will be available at the registration desk.

All participants and accompanying persons are kindly requested to wear their conference badges during the scientific sessions and symposium social events.

### **LANGUAGE**

The official language of the symposium is English.

### **INTERNET AND E-MAIL ACCESS**

To access the internet and e-mail, please ask at the reception desk of the Valamar Diamant Hotel.

### **OPENING CEREMONY AND SOCIAL EVENTS**

The opening ceremony will be held in the congress hall of the Valamar Diamant Hotel on Monday, May 15 from 15:00 to 15:30. The welcome reception with buffet dinner will take place at 20:00 on the terrace of the hotel restaurant.

On Wednesday, May 17 the symposium excursion is scheduled at 15:00. Excursion includes symposium dinner at family run farm Jadruhi, starting at 19:00.

### **INFORMATION FOR PRESENTERS**

Oral presentations will be held in Magnolia congress hall of the Valamar Diamant Hotel. LCD projections are available during all sessions. Please send your PowerPoint presentation to the [powerofmicrobes2023@gmail.com](mailto:powerofmicrobes2023@gmail.com).

Posters will be displayed in the congress hall Lavanda on Tuesday, May 16 and should be mounted during the morning. Presenters of the posters are kindly requested to be at their posters and available for discussion on Tuesday, May 16 from 16:20 to 20:00. Posters should be dismantled immediately after poster session.

## **P47**

### **Presence of RNA Viruses in Raspberries**

Radovan Čobanović<sup>1</sup>, Katica Mihajlović<sup>1</sup>, Bojana Kokić<sup>2</sup>

<sup>1</sup>SP Laboratory A.D., Serbia

<sup>2</sup>Institute of food technology in Novi Sad, University of Novi Sad, Serbia

radovan.cobanovic@splaboratorija.rs

Serbia is one of the largest exporter of berries in EU. Berries are a perishable food which can be consumed as fresh or minimally-processed as well as a frozen ingredient added to many foods. According to EFSA, contamination by Noroviruses and Hepatitis A viruses may occur at various stages of berry production chain.

Based on above mentioned, the aim of this study was to evaluate virological safety of raspberries (2057 samples) grown in Serbia. Analyzed samples were collected from various independent producers from January 2019 until January 2022. Samples were analyzed on Norovirus (NoV) genogroups I (GI) and II (GII) and Hepatitis A (HAV). The applied method was based on ISO 15216-2:2019 Microbiology of the food chain — Horizontal method for determination of hepatitis A virus and norovirus using real-time RT-PCR — Part 2: Method for detection. Out of 2057 analyzed samples only 8 (0,4%) showed unsatisfactory positive result concerning NoV genogroup I (GI) and 1 (0,05%) concerning NoV genogroup II (GII) but neither one showed unsatisfactory positive result concerning HAV viruses.

As far as obtained results are concerned it can be concluded that Good Agricultural Practices (GAP), Good Hygiene Practices (GHP) and Good Manufacturing Practices (GMP) are properly implemented throughout berry production chain in Serbia. Due to high risk of contamination during berry production it is necessary to conduct permanent monitoring in order to provide microbiologically safe products that are exported to the EU.



Organised by  
Croatian Microbiological Society,  
Czechoslovak Society for Microbiology,  
Hungarian Society for Microbiology,  
Slovenian Microbiological Society,  
Turkish Society of Microbiology.



Supported by Croatian  
Academy of Engineering



Supported by Faculty of Food  
Technology and Biotechnology  
University of Zagreb



Supported by Federation  
of European Microbiological  
Societies

---

[www.hmd-cms.hr/power2023](http://www.hmd-cms.hr/power2023)