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3RD INTERNATIONAL CONFERENCE

ANTIMICROBIAL RESISTANCE – CURRENT STATE AND PERSPECTIVES



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PROGRAM 17th of May, 2024.

17 th of May, 2024.	
08:00-09:00	Registration of the participants
09:00-11:00	<p>Session 1. Current state of antimicrobial resistance Moderators: <i>Milica Bajčetić</i>, full professor Department of Pharmacology, Clinical Pharmacology and Toxicology, Faculty of Medicine, University of Belgrade, Serbia <i>Ahmed Smajlović</i>, full professor Veterinary Faculty, University of Sarajevo, Bosnia and Herzegovina</p> <p>Can alternatives to antibiotics replace the use of antibiotics in livestock production? <i>Luca Guardabassi</i>, full professor Department of Veterinary and Animal Sciences, Faculty of Health and Medical Sciences University of Copenhagen Denmark</p> <p>Antimicrobial resistance surveillance in Serbia – Data from human national reference laboratory <i>Deana Medić</i>, associate professor Faculty of Medicine, University of Novi Sad, Institute of Public Health Vojvodina Serbia</p> <p>Antimicrobial resistance surveillance in Serbia – Data from veterinary national reference laboratory <i>Dalibor Todorović</i>, research associate Scientific Veterinary Institute 'Novi Sad' Serbia</p> <p>Recent trends in antimicrobial resistance of bacteria from livestock and meat in the Netherlands – from a One Health perspective <i>Kees Veldman</i>, senior scientist National Reference Laboratory on antimicrobial resistance in animals, Wageningen Bioveterinary Research Netherlands</p> <p><i>Presentation of gold sponsor - Hemofarm</i> Spectrum of therapeutic possibilities in the treatment of diarrhea of different etiologies <i>Maria Pete</i>, assistant professor Faculty of Medicine, University of Novi Sad Serbia</p> <p><i>Presentation of silver sponsor - Zoetis</i> Zoetis: Innovative approach to veterinarian market <i>Dino Haračić</i></p>
11:00-11:30	Coffee break
11:30-14:00	<p>Session 2. Antimicrobial resistance from the One health perspective Moderators: <i>Janko Samardžić</i>, associate professor Faculty of Medicine, University of Belgrade, Serbia <i>Deana Medić</i>, associate professor Faculty of Medicine, University of Novi Sad, Serbia</p> <p>Session 3. Mycotoxins, animal feed and food safety Moderators: <i>Nebojša Kladar</i>, assistant professor Faculty of Medicine, University of Novi Sad, Serbia <i>Dragana Budakov</i>, associate professor Faculty of Agriculture, University of Novi Sad, Serbia</p>
<p>One health approach in AMR and antibiotic consumption control in Serbia – five years of the national multi-sectoral coordinating group activities <i>Milica Bajčetić</i>, full professor Department of Pharmacology, Clinical Pharmacology and Toxicology, Faculty of Medicine, University of Belgrade Serbia</p>	<p>Influence of cross-contamination of animal feed with antimicrobials on intestinal microbiome <i>Małgorzata Olejnik</i>, associate professor Faculty of Biological and Veterinary Sciences, Nicolaus Copernicus University in Torun Poland</p>
<p>The economic cost of antimicrobial resistance: FAO Perspective <i>Diletta Topazio</i>, economist Food and Agricultural Organization of the United Nations; teaching assistant, LUISS Guido Carli University, Rome Italy</p>	<p>Association of AMR in E. coli from calves raised for meat production with husbandry system <i>Tenhagen Bernd-Alois</i>, senior researcher Federal Institute for Risk Assessment, Berlin Germany</p>



PROGRAM 17th of May, 2024.

<p>Different aspects of Hungarian antibiotic use <i>Ria Benkő</i>, associate professor Faculty of Pharmacy, University of Szeged Hungary</p>	<p>Evaluation of antimicrobial resistance of <i>Pseudomonas</i> spp. isolates from food <i>Radoslava Savić Radovanović</i>, associate professor Department of Food Hygiene and Technology, Faculty of Veterinary Medicine, University of Belgrade Serbia</p>		
<p>Antimicrobial consumption in Montenegro from 2009 to 2022 <i>Snežana Mugoša</i>, assistant professor Faculty of Medicine, University of Montenegro, Institute for medicine and medical devices of Montenegro Montenegro</p>	<p>Monitoring of antimicrobial drug residues in milk for further processing <i>Marija Pajić</i>, associate professor Department of Veterinary medicine, Faculty of Agriculture, University of Novi Sad Serbia</p>		
<p>From 'two medicines' to 'One health' and beyond <i>Olga Horvat</i>, full professor Faculty of Medicine, University of Novi Sad Serbia</p>	<p>Mycotoxins escalation challenges in the light of climate change <i>Jovana Kos</i>, senior research associate Institute of Food Technology in Novi Sad, University of Novi Sad Serbia</p>		
<p>The One Health approach in the fight against antimicrobial resistance <i>Lejla Velić</i>, associate professor Department of Microbiology and Infectious diseases, Veterinary Faculty, University of Sarajevo Bosnia and Herzegovina</p>	<p>Antimicrobial resistance in food and food producing animals in the Republic of Macedonia <i>Marija Ratkova Manovska</i>, research associate Faculty of Veterinary Medicine – Skopje, Ss. Cyril and Methodius University in Skopje Republic of North Macedonia</p>		
<p>Colistin: Old antibiotic - new problem <i>Vuk Vračar</i>, associate professor Department of Veterinary Medicine, Faculty of Agriculture, University of Novi Sad Serbia</p>	<p>Food safety issues related to antibiotic residues in the aquaculture <i>Dragana Ljubojević Pelić</i>, senior research associate Scientific Veterinary Institute 'Novi Sad' Serbia</p>		
<p>Activities of the local and regional One Health organizations <i>Sara Savić</i>, principal research fellow Scientific Veterinary Institute 'Novi Sad' Serbia</p>	<p>Alternative strategies in animal feed production to combat antimicrobial resistance <i>Nedeljka Spasevski</i>, research associate Institute of Food Technology in Novi Sad, University of Novi Sad Serbia</p>		
<p>14:00-15:00</p>	<p>Lunch and Awarding of certificates</p>		
<p>15:00-19:00</p>	<table border="0"> <tr> <td data-bbox="683 1164 1367 1358"> <p>Workshop 1. Strategies to reduce antimicrobial use in the poultry production - examples from Italy and Serbia <i>Alessandra Piccirillo</i>, associate professor Department of Comparative Biomedicine and Food Science, University of Padua Italy <i>Marko Pajić</i>, research associate Scientific Veterinary, Institute "Novi Sad" Serbia</p> </td> <td data-bbox="683 1358 1367 1551"> <p>Workshop 2. Practical approach for dogs with atopic dermatitis <i>Tina Kotnik</i>, associate professor Veterinary Faculty, University of Ljubljana Slovenia <i>Sandra Nikolić</i>, teaching assistant Department of Veterinary Medicine, Faculty of Agriculture, University of Novi Sad Serbia</p> </td> </tr> </table>	<p>Workshop 1. Strategies to reduce antimicrobial use in the poultry production - examples from Italy and Serbia <i>Alessandra Piccirillo</i>, associate professor Department of Comparative Biomedicine and Food Science, University of Padua Italy <i>Marko Pajić</i>, research associate Scientific Veterinary, Institute "Novi Sad" Serbia</p>	<p>Workshop 2. Practical approach for dogs with atopic dermatitis <i>Tina Kotnik</i>, associate professor Veterinary Faculty, University of Ljubljana Slovenia <i>Sandra Nikolić</i>, teaching assistant Department of Veterinary Medicine, Faculty of Agriculture, University of Novi Sad Serbia</p>
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<p>20:00</p>	<p>Gala dinner</p>		



PROGRAM 18th of May, 2024.

18th of May, 2024.		
08:00-09:00	Registration of the participants	
09:00-10:00	Poster session and short communications	
10:00-12:30	<p>Session 4. AMR in the farm animals</p> <p>Moderators: <i>Miodrag Radinović</i>, full professor Faculty of Agriculture, University of Novi Sad, Serbia <i>Jasna Prodanov Radulović</i>, senior research associate Scientific Veterinary Institute 'Novi Sad', Serbia</p>	<p>Session 5. AMR in the human medicine</p> <p>Moderators: <i>Olga Horvat</i>, full professor Department of Pharmacology Toxicology and Clinical Pharmacology, Faculty of Medicine, University of Novi Sad, Serbia <i>Suzana Mimica</i>, associate professor Department of Pharmacology, Faculty of Medicine University of Osijek, Department of Clinical Pharmacology, University Hospital Centre Osijek, Croatia</p>
	<p>Biosecurity in animal production to improve animal health and reduce antimicrobial use</p> <p><i>Jeroen Dewulf</i>, full professor Department of Internal medicine, Reproduction and population medicine, Faculty of Veterinary Medicine, University of Ghent <i>Belgium</i></p>	<p>Antimicrobial resistance surveillance in Republic of North Macedonia with focus on carbapenem resistant Enterobacteria as an actual problem in clinical practice</p> <p><i>Ana Kaftandzieva</i>, full professor Institute of Microbiology and Parasitology, Ss. Cyril and Methodius University in Skopje <i>Republic of North Macedonia</i></p>
<p>Biosecurity in poultry production in Italy</p> <p><i>Alessandra Piccirillo</i>, associate professor Department of Comparative Biomedicine and Food Science, University of Padua <i>Italy</i></p>	<p>Lactonase mediated quorum quenching of <i>Pseudomonas aeruginosa</i> virulence</p> <p><i>Milka Malešević</i>, research associate Institute of Molecular Genetics and Genetic Engineering, University of Belgrade <i>Serbia</i></p>	
<p>Current status of biosecurity measures in the pig production sector in Serbia</p> <p><i>Jasna Prodanov Radulović</i>, senior research associate Scientific Veterinary Institute 'Novi Sad' <i>Serbia</i></p>	<p>The impact of antibiotic interactions on the pathogens generating resistant hospital infections</p> <p><i>Bojana Bozic Cvijan</i>, assistant professor Department of Pharmacology, Clinical Pharmacology and Toxicology, Faculty of Medicine, University of Belgrade <i>Serbia</i></p>	
<p>Antimicrobial therapy: advances and challenges facing veterinary practitioners in Bulgaria</p> <p><i>Aneliya Milanova</i>, full professor Department of Pharmacology, Animal Physiology, Biochemistry and Chemistry, Faculty of Veterinary Medicine, Trakia University <i>Bulgaria</i></p>	<p>The role of the clinical pharmacologist in rationalizing the use of antibiotics - experiences from the Osijek Clinical Hospital Center, Croatia</p> <p><i>Suzana Mimica</i>, associate professor Department of Pharmacology, Faculty of Medicine University of Osijek, Department of Clinical Pharmacology, University Hospital Centre Osijek <i>Croatia</i></p>	
<p>Prudent antimicrobial use on the poultry farms in Serbia</p> <p><i>Marko Pajić</i>, research associate Scientific Veterinary Institute 'Novi Sad' <i>Serbia</i></p>	<p>Assessment of seasonal airborne resistome dynamics in response to air pollution exposure in the Belgrade metropolitan area</p> <p><i>Katarina Novović</i>, senior research associate Institute of Molecular Genetics and Genetic Engineering, University of Belgrade <i>Serbia</i></p>	
<p>Metabolic gene expression signatures in response to residual doses of antibiotics in broiler chickens</p> <p><i>Anna Sławińska</i>, associate professor Faculty of Biological and Veterinary Sciences, Nicolaus Copernicus University in Torun <i>Poland</i></p>	<p>Current status of multidrug resistant organisms in critically ill children - a growing concern: Report from the Institute for child and youth health care in Vojvodina, Serbia</p> <p><i>Isabela Fabri</i>, assistant professor, Institute for Child and Youth Health Care Vojvodina, Faculty of Medicine, University of Novi Sad <i>Serbia</i></p>	
<p>Pharmacokinetic/pharmacodynamic analysis of enrofloxacin in porcine synovial fluid in <i>Glaesserella parasuis</i> infection</p> <p><i>Patrik Mag</i>, assistant lecturer Department of Pharmacology and Toxicology, University of Veterinary Medicine Budapest <i>Hungary</i></p>	<p>Pharmacoeconomics and pharmacoepidemiology of antimicrobial therapies</p> <p><i>Jovan Mihajlović</i>, external researcher The University of Groningen, <i>Netherlands</i> Mihajlović Health Analytics <i>Serbia</i></p>	
<p>Presentation of general sponsor - Topigs Norsvin Correlation between antibiotic use and pig genetics <i>Laszlo Buza</i>, associate professor University Veterinary Medicine Budapest <i>Hungary</i></p>		



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Aqualor H disinfection products - proven effectiveness in the prevention of African swine fever

Bojan Toholj, full professor

Department of Veterinary Medicine, Faculty of Agriculture, University of Novi Sad

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12:30-13:00	Coffee break	
13:00-14:30	<p>Session 6. AMR in the companion animals Moderators: <i>Bojan Toholj</i>, full professor Faculty of Agriculture, University of Novi Sad, Serbia <i>Natalija Milčić Matić</i>, teaching assistant Faculty of Veterinary Medicine, University of Belgrade, Serbia</p>	<p>Session 7. AMR in the plant protection and environment Moderators: <i>Mila Grahovac</i>, associate professor Faculty of Agriculture, University of Novi Sad, Serbia <i>Milan Ivanović</i>, full professor Faculty of Agriculture, University of Belgrade, Serbia</p>
Do we need new drugs in therapy of Otitis externa, or do the old ones still work? <i>Natalija Milčić Matić</i> , teaching assistant <i>Isidora Prošić</i> , teaching assistant Faculty of Veterinary Medicine, University of Belgrade <i>Serbia</i>	<p>Antifungal-resistance from both human health and plant protection perspectives <i>Li-Jun Ma</i>, associate professor College of Natural Sciences, University of Massachusetts <i>United States of America</i></p>	
	<p>Environmental impact of antibiotic use in plant protection <i>Milan Ivanović</i>, full professor Faculty of Agriculture, University of Belgrade <i>Serbia</i></p>	
<p>Phage therapy of skin dysbiosis in dogs <i>Tina Kotnik</i>, associate professor Veterinary Faculty, University of Ljubljana <i>Slovenia</i></p>	<p>Formation of soil resistome <i>Simonida S. Đurić</i>, full professor Faculty of Agriculture, University of Novi Sad <i>Serbia</i></p>	
<p>Effect of antimicrobials and probiotics on gut microbiota in companion animals <i>Nataša Golić</i>, full research professor Institute of Molecular Genetics and Genetic Engineering, University of Belgrade <i>Serbia</i></p>	<p>Biosecurity issue in the common carp production <i>Miloš Pelić</i>, research associate Scientific Veterinary Institute 'Novi Sad' <i>Serbia</i></p>	
<p>Antibiotic sensitivity of bacterial isolates from canine ejaculates <i>Jelena Apić</i>, senior research associate Scientific Veterinary Institute 'Novi Sad' <i>Serbia</i></p>	<p>Wastewater from slaughterhouses: A risk for antimicrobial resistance dissemination throughout the One Health concept <i>Katerina Dodovska Blagoevska</i>, senior research associate Faculty of Veterinary Medicine – Skopje, Ss. Cyril and Methodius University in Skopje <i>Republic of North Macedonia</i></p>	
<p>Human approved antimicrobials in the small animal practice: when and why? <i>Zorana Kovačević</i>, associate professor Department of Veterinary Medicine, Faculty of Agriculture, University of Novi Sad <i>Serbia</i></p>	<p>Toward sustainable control of gray mold on strawberries: Exploring alternatives to synthetic fungicides considering resistance evolution <i>Marta Loč</i>, teaching assistant Faculty of Agriculture, University of Novi Sad <i>Serbia</i></p>	
14:30-15:30	Lunch	
15:30-19:30	<p>Workshop 3. Comprehensive approach in the preventive measures to minimize antibiotic use in pig production <i>Božidar Savić</i>, full professor Faculty of Agriculture, University of Novi Sad, research associate, Scientific Institute of Veterinary Medicine of Serbia <i>Serbia</i> <i>Siniša Milić</i>, specialist in veterinary medicine Veterinary Institute "Sombor" <i>Serbia</i> <i>Zdravko Tomić</i>, technical manager Boehringer Ingelheim <i>Serbia</i></p>	<p>Workshop 4. Antibiotic use in pregnant bitches - yes or no? <i>Ivan Stančić</i>, full professor Department of Veterinary Medicine, Faculty of Agriculture, University of Novi Sad <i>Serbia</i> <i>Ivan Galić</i>, assistant professor Department of Veterinary Medicine, Faculty of Agriculture, University of Novi Sad <i>Serbia</i> <i>Jelena Apić</i>, senior research associate Scientific Veterinary Institute 'Novi Sad' <i>Serbia</i></p>



Dear colleagues,

3rd International Conference “Antimicrobial resistance – current state and perspective” is event dedicated to antimicrobial resistance under the One Health umbrella, providing a unique collaborative environment between researchers, veterinarians, doctors, pharmacists and stakeholders. One Health approach will enable multicestoral collaboration between humans, animals and environment in solving problem of antimicrobial resistance as one of the major health threats.

The risk for the spread of bacterial resistance when antimicrobials are used is well known, and the interconnection of use of animal and human antimicrobials further increases the concern for human and animal health. Misusage and overuse of antimicrobials is one of the main drivers of antimicrobial resistance, so increase attention and measures to promote an overall reduced and responsible use are necessary. Antimicrobials are still critically important and necessary in the treatment of animals and humans and we have to save their effectiveness for the future generations.

*dr Zorana Kovačević, associate professor
president of the scientific and program committee*

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**ASSESSMENT OF SEASONAL AIRBORNE RESISTOME
DYNAMICS IN RESPONSE TO AIR POLLUTION EXPOSURE IN
THE BELGRADE METROPOLITAN AREA**

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Antimicrobial resistance (AMR) and air pollution have been identified as one of the most serious threats to human health worldwide. The scarce data demonstrating their interdependence indicates a need to obtain evidence from a broader global area, especially from regions exposed to high air pollution. Considering that Serbia is a country struggling with excessive antibiotics use and misuse, a high percentage of multidrug-resistant bacterial isolates, and poor air quality, the Serbian capital Belgrade has been recognized as an interesting research model for the effects of air pollution on the airborne transmission of AMR. Hence, this abstract aims to present

the concept of an ongoing project (AirPollRes) that points to the additional risk dimension of air pollution to human, animal, and environmental health. After optimization of air sampling and DNA extraction protocol, the air samples will be collected at nine locations in the Belgrade metropolitan area selected according to air pollution level during four seasons. The state-of-the-art shotgun metagenomic sequencing and bioinformatic analysis of obtained sequences will provide information about microbial community composition of airborne metagenomes. In addition, sequenced airborne metagenomes will be analyzed for the abundance and diversity of resistomes (antibiotic and biocide/metal resistance genes) and mobilomes using several databases and tools. Correlation analyses will offer us insight into the effect of air pollution and seasonal variations on abundance and diversity of airborne pathogens, resistome and mobilome in the Belgrade metropolitan area. In-depth approach of the AirPollRes project will provide the first insights into intersection of AMR and air pollution in the Belgrade metropolitan area, which is highly vulnerable to these health threats. As the

AirPollRes is a pioneering project in this field, the expected short-term impact is the introduction of routine monitoring of pathogenic microbes and resistance determinants in the air in Belgrade, while the longer-term impact will be reflected in the improvement of human and animal health, allowing for a longer life with higher quality.

Key words: antimicrobial resistance, air pollution, airborne metagenome, resistome, mobilome, Belgrade

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