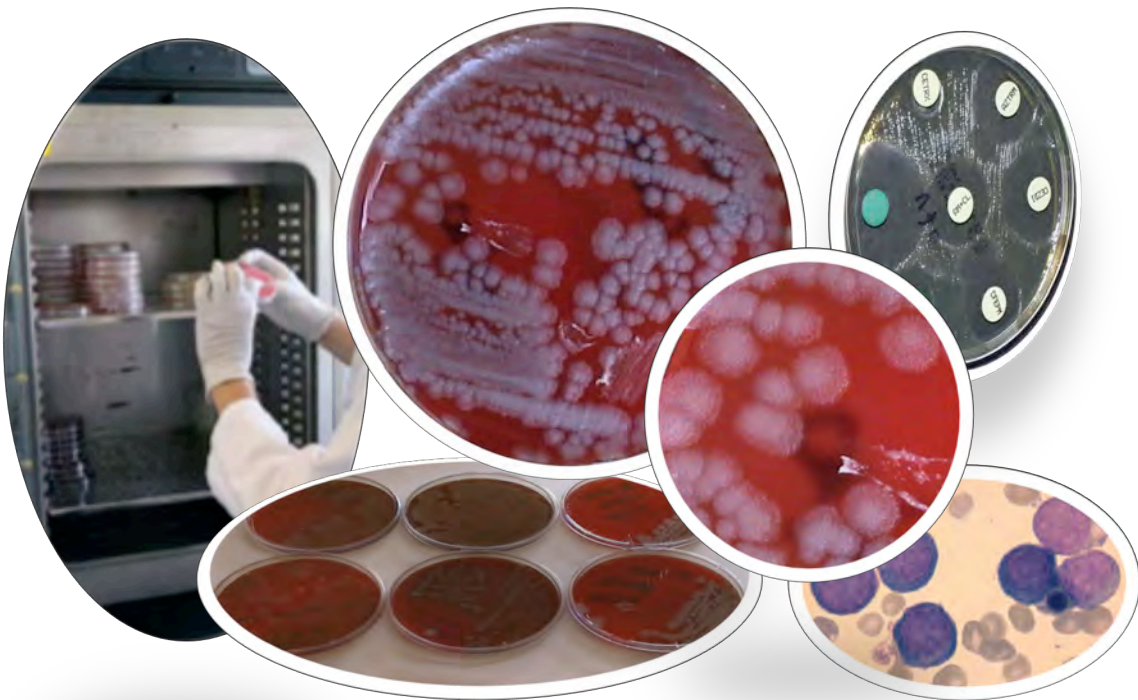




**5th Symposium on Antimicrobial Resistance
in Animals and the Environment
ARAE 2013**

30 JUNE – 3 JULY 2013 AULA Ghent, Belgium



Preliminary Program

www.ARAE2013.be

30 June 2013

17.00 **Registration**

18.30 **Welcome Address**
Patrick Butaye
President ARAE 2013

18.40-19.40 **Keynote Lecture**

The resistance tsunami, antimicrobial stewardship, and the golden age of microbiology
John Prescott
Ontario, Canada

19.40 **Welcome Reception**

1 July 2013

09.00-09.40 Invited Lecture I

Studying the relationship between antimicrobial use and resistance, easier said than done

Jeroen Dewulf
Ghent, Belgium

09.40-10.40 Oral session I

09.40 High occurrence of *E. coli* producing ESBL and pAmpC in Swedish broiler production despite minimal usage of antimicrobials

Börjesson S, Nilsson O, Landen A, Finn M, Englund S, Bengtsson B
Department of Animal health and Antimicrobial strategies, National Veterinary Institute (SVA), Uppsala, Sweden

09.55 Antimicrobial resistance and MLST clonal types of *Bacteroides fragilis* isolated from humans and animals from Central Pennsylvania

Bova M, Kumar A, Doijad S, Jayarao BM
Penn State Animal Diagnostic Laboratory, Department of Veterinary and Biomedical Sciences, The Pennsylvania State University, University Park, PA, USA

10.10 Prevalence of methicillin-resistant *Staphylococcus aureus* in dairy cattle

van Duijkeren E 1, Hengeveld P 1, Albers M 1, Pluister G 1, Jacobs P 2, Heres L, van de Giessen AW 1

1 Centre for Infectious Disease Control, National Institute for Public Health and the Environment, Bilthoven, the Netherlands; 2 The Netherlands Food and Consumer Product Safety Authority, Utrecht, the Netherlands; 3 VION Food Group, Eindhoven, the Netherlands

10.25 Prevalence of extended-spectrum Beta-lactamase-producing *Escherichia coli* in people living and/or working on Dutch broiler farms

Huijbers PMC 1,2, Graat EAM 2, van Hoek AHAM 1, van Santen MG 1, Hengeveld P 1, Haenen A 1, de Greeff SC 1, Schouls LM 1, van de Giessen AW 1, van Duijkeren E 1

1 Centre for Infectious Disease Control, National Institute for Public Health and the Environment, Bilthoven, the Netherlands; 2 Quantitative Veterinary Epidemiology Group, Wageningen Institute of Animal Sciences, Wageningen University, Wageningen, the Netherlands

10.40-11.10 Coffee Break

11.10-11.30 Poster session I viewing

11.30-12.30 Oral session II

- 11.30 Presence of the multi-resistance gene cfr in bacteria from swine and swine farm environment**
Wang Y 1, Schwarz S 2, Wu C 1, Shen J 1
1 College of Veterinary Medicine, China Agricultural University, Beijing, P.R.China; 2 Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut (FLI), Neustadt-Mariensee, Germany
- 11.45 Do insects represent a link between the agricultural and urban environment for antibiotic resistance traits?**
Zurek L 1,2, Ghosh A 1
1 Department of Diagnostic Medicine and Pathobiology, College of Veterinary Medicine, Kansas State University, Manhattan, USA; 2 Department of Entomology, Kansas State University, Manhattan, USA
- 12.00 Antimicrobial resistance monitoring projects for zoonotic and indicator bacteria: EASSA vs EFSA - Common aspects and differences**
Moyaert H, de Jong A, El Garch F, Klein U, Butty P, Rigaut D, Simjee S, Thomas V
EASSA Study Group, CEESA, Brussels, Belgium
- 12.15 Integron characterization and typing of Belgian isolates of Shiga toxin-producing *Escherichia coli***
Van Meervenne E 1,2,3, Boon N 2, Verstraete K 1, Devlieghere F 3, De Reu K 1, Herman L 1, Buvens G 4, Piérard D 4, Van Coillie E 1
1 Technology and Food Science Unit, Institute for Agricultural and Fisheries Research (ILVO), Melle, Belgium; 2 Laboratory of Microbial Ecology and Technology (LabMET), Ghent University, Ghent, Belgium. ; 3 Laboratory of Food Microbiology and Food Preservation (LFMFP), Ghent University, Ghent, Belgium; 4 Laboratory of Clinical Microbiology, University Hospital Brussels, Brussels, Belgium

12.30-13.15 Lunch

13.15-14.00 Poster Discussion Session I
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Monitoring of antimicrobial resistance

Antibiotic resistance profiles of faecal coliforms and enterococci from hedgehogs in a revalidation centre

Noirault A 1, Duprez J-N 2, Soubbotina A 1, Crispeels J 3, Muylaert A 2, Marlier D 1, Mainil J 2

1 Department of Clinical Sciences of Companion Animals and Equines, Clinics for Birds, Rabbits and Rodents, Faculty of Veterinary Medicine, University of Liège, Liège, Belgium; 2 Laboratory of Bacteriology, Department of Infectious Diseases, Faculty of Veterinary Medicine, University of Liège, Liège, Belgium; 3 C.R.E.A.V.E.S. (Revalidation Centre for Wild Animal Species), Héron, Belgium

Antimicrobial resistance in LA-MRSA isolates from different animal species, environment and humans

Pletinckx LJ 1,2, Verheghe M 4, Dewulf J 3, De Bleecker Y 1, Goddeeris BM 2, De Man I 1

1 KATHO University College, Roeselare, Belgium; 2 KU Leuven, Department of Biosystems,

Heverlee, Belgium; 3 Ghent University, Faculty of Veterinary Medicine, Veterinary Epidemiology Unit, Department of Reproduction, Obstetrics and Herd Health, Merelbeke, Belgium; 4 Institute for Agricultural and Fisheries Research (ILVO), Technology and Food Science Unit, Food safety, Melle, Belgium

Antimicrobial resistance of *Salmonella* from poultry in Shandong province of China, 2009 and 2012

Wu CM, Lai J, Wang Y, Wu CB, Wang H, Li R, Shen J

Beijing Key Laboratory of Detection Technology for Animal-Derived Food Safety, College of Veterinary Medicine, China Agricultural University, Beijing, P. R. China

European Antimicrobial Susceptibility Surveillance in Animals (EASSA): results for *Campylobacter jejuni* and *Campylobacter coli* recovered at processing from healthy cattle, pigs and chickens in 10 EU countries (2008-2009)

de Jong A 1, El Garch F 1, Moyaert H 1, Simjee S 1, Thomas V 1, Maher K 2,

Morrissey I 2, Butty P 1, Klein U 1, Richard-Mazet A 1, Rigaut D 1, Vallé M 1

1 EASSA Study Group, CEESA, Brussels, Belgium; 2 Quotient BioResearch, Fordham, United Kingdom

Marked increase of methicillin-resistant *Staphylococcus aureus* in slaughter pigs from Switzerland

Buettner S 1, Overesch G 2, Wipf J 2, Perreten V 2

1 Monitoring, Federal Veterinary Office, Federal Department of Home Affairs, Bern, Switzerland; 2 Institute of Veterinary Bacteriology, Vetsuisse Faculty, University of Bern, Bern, Switzerland

Revised recommendation for broth microdilution susceptibility testing of *Rhodococcus equi* from animals

Riesenberg A 1,2, Feßler AT 1, Frömke C 3, Kadlec K 1, Klarmann D 2, Kreienbrock L 3, Werckenthin C 2, Schwarz S 1

1 Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut (FLI), Neustadt-Mariensee, Germany; 2 Lower Saxony State Office for Consumer Protection and Food Safety (LAVES), Food and Veterinary Institute Oldenburg, Germany; 3 Department of Biometry, Epidemiology and Information Processing, WHO Collaborating Centre for Research and Training in Veterinary Public Health, University of Veterinary Medicine, Foundation, Hannover, Germany

Proposal for quality control ranges of *Staphylococcus aureus* ATCC®25923 for agar disk diffusion using 15 µg and 30 µg tylosin disks

Buß M 1,2, Feßler AT 1, Turnidge J 3, Peters T 2, Schwarz S 1

1 Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut (FLI), Neustadt-Mariensee, Germany; 2 Milchtierherden-Betreuungs- und Forschungsgesellschaft mbH (MBFG), Wunstorf, Germany; 3 SA Pathology at Women's and Children's Hospital, North Adelaide, Australia

Tylosin susceptibility testing of *Staphylococcal* isolates from bovine mastitis

Buß M 1,2, Feßler AT 1, Kadlec K 1, Kaspar H 3, Mankertz J 3, Peters T 2, Schwarz S 1

1 Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut (FLI), Neustadt-Mariensee, Germany; 2 Milchtierherden-Betreuungs- und Forschungsgesellschaft mbH (MBFG), Wunstorf, Germany; 3 Bundesamt für Verbraucherschutz und Lebensmittelsicherheit (BVL), Berlin, Germany

Proposal for quality control ranges of *Staphylococcus aureus* ATCC®25923 and

***Escherichia coli* ATCC®25922 for agar disk diffusion using 30 µg cefoperazone disks**

Feßler AT 1, Buß M 1,2, Turnidge J 3, Peters T 2, Schwarz S 1

1 Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut (FLI), Neustadt-Mariensee, Germany; 2 Milchtierherden-Betreuungs- und Forschungsgesellschaft mbH (MBFG), Wunstorf, Germany; 3 SA Pathology at Women's and Children's Hospital, North Adelaide, Australia

The prevalence of antimicrobial resistant *Escherichia coli* in wildlife species in Ireland

Smith S 1, Fanning S 2, Wang J 2, McMahon BJ 1

1 UCD School of Agriculture & Food Science, University College Dublin, Ireland; 2 UCD Centre for Food Safety, School of Public Health, Physiotherapy & Population Science, UCD Centre for Molecular Innovation & Drug Design, University College Dublin, Dublin, Ireland

Molecular characterisation of plasmids identified in multi-drug resistant *Escherichia coli* isolated from food producing animals and healthy humans

Wang J 1, Stephan R 2, Hächler H 2, Fanning S 1

1 UCD Centre for Food Safety, School of Public Health, Physiotherapy & Population Science, UCD Centre for Molecular Innovation & Drug Design, University College Dublin, Dublin, Ireland; 2 Institute for Food Safety & Hygiene, Vetsuisse Faculty, University of Zurich, Zurich, Switzerland

Prevalence of resistant *Salmonella* spp. isolates from black-headed gulls in Czech Republic: Changes within years 1991-2012

Masaříková M 1,2, Manga I 1, Čížek A 1,2, Literák I 2,3, Myšková P 4, Karpíšková R 4

1 Department of Infectious Diseases and Microbiology, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 2 CEITEC VFU Brno, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 3 Department of Biology and Wildlife Diseases, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 4 Department of Bacteriology, Veterinary Research Institute, Brno, Czech Republic

Eating ESBLs – Modeling the exposure to ESBL-producing *E. coli* via the broiler meat chain

Sharp H, Kaesbohrer A

Department of Biological Safety, Federal Institute for Risk Assessment, Berlin, Germany

12 years of German national resistance monitoring (GERM-Vet) - Example *E. coli*: where are we standing?

Kaspar H, Steinacker U, Heidemanns K, Roemer A, Wallmann J, Mankertz J

Federal Office of Consumer Protection and Food Safety (BVL), Berlin, Germany

Sales of veterinary antimicrobial agents in Germany

Reimer I 1, Bender A 1, Haas C 2, Preuß J 1, Kirsch K 1, Roemer A 1, Wallmann J 1

1 Federal Office for Consumer Protection and Food Safety (BVL), Berlin, Germany; 2 Institute of Medical Documentation and Information (DIMDI), Bonn, Germany

Trends in antimicrobial resistance among selected bacterial pathogens of cattle in the Czech Republic

Nechvatalova K, Kucerova Z, Nedbalcova K

Department of Immunology, Veterinary Research Institute, Brno, Czech Republic

Determination of MIC and MPC of *Pasteurella multocida* isolates from respiratory infections of pigs and calves in the Czech Republic from 2008 to 2012

Nedbalcova K, Kucerova Z, Nechvatalova K

Department of Immunology, Veterinary Research Institute, Brno, Czech Republic

Faecal shedding of ESBL-producing *Escherichia coli* in pigs on large scale farm after voluntary withdrawal of ceftiofur

Cizek A 1,2, Masarikova M 1,2, Paclikova K 1, Vasek J 3, Smola J 2,3

1 Department of Infectious Diseases and Microbiology, Faculty of Veterinary Medicine, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 2 CEITEC VFU, Veterinary and Pharmaceutical University Brno, Brno, Czech Republic; 3 Ruminant and Swine Clinic, Faculty of Veterinary Medicine, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic

Analysis of the trends of sales and prescriptions of cephalosporins of the 3rd and 4th generation in veterinary medicine – An experience from the Czech Republic

Pokludová L 1, Bureš J 1, Kučerová Z 2, Hera A 3, Koutecká L 4

1 Department of Marketing Authorisation, Institute for State Control of Veterinary Biologicals and Medicaments, Brno, Czech Republic; 2 Department of Microbiology, Veterinary Research Institute, Brno, Czech Republic; 3 Head of Agency, Institute for State Control of Veterinary Biologicals and Medicaments, Brno, Czech Republic; 4 Department of Inspection, Institute for State Control of Veterinary Biologicals and Medicaments, Louny, Czech Republic

Role of shellfish hatchery as a reservoir of antimicrobial resistant bacteria

Miranda CD 1,2, Rojas R 1, Garrido M 3, Geisse J 3, González G 3

1 Aquatic Pathobiology Laboratory, Department of Aquaculture, Universidad Católica del Norte, Coquimbo, Chile; 2 Centro de Estudios Avanzados (CEAZA), Coquimbo, Chile; 3 Research on Antimicrobial Agents Laboratory, Department of Microbiology, Universidad de Concepción, Concepción, Chile

Antimicrobial resistance and presence of the *ica* operon among *Staphylococcus epidermidis* from farm animals and farmers

Argudín MA 1, Vanderhaeghen W 2, Butaye P 1,3

1 Department of General Bacteriology, Veterinary and Agrochemical Research centre, Brussels, Belgium; 2 Katholieke Hogeschool Zuid-West-Vlaanderen, Department of nursery and biotechnology, Roeselare, Belgium; 3 Department of Pathology, Bacteriology, and Avian Diseases, Ghent University, Ghent, Belgium

Tetracycline resistance genes are stably present in feces of dairy cows with prophylactic chlortetracycline treatment

Kyselkova M, Havlickova P, Jirout J, Elhottova D

Institute of Soil Biology, Biology Centre AS CR, Ceske Budejovice, Czech Republic

Antimicrobial resistance prevalence among pathogenic-commensal *Escherichia coli*, and commensal *Enterococci* spp. from food-producing animals in Belgium

Chantziaras I 1, Butaye P 2,3, Boyen F 3, Callens B 1, Dewulf J 1

1 Veterinary Epidemiology Unit, Department of Reproduction, Obstetrics and Herd Health, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium; 2 Department of Pathology, Bacteriology and Avian Diseases, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium; 3 Veterinary and Agrochemical Research Center (VAR), Brussels, Belgium; 4 Department of Pathology, Bacteriology and Avian Diseases, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium

Antimicrobial susceptibility of mastitis pathogens Isolated from milk samples in Pennsylvania from 2004-2011

Kariyawasam S, Tammy M, Lintner V, Pierre T, [Jayarao B](#)

Penn State Animal Diagnostic Laboratory, Department of Veterinary and Biomedical Sciences, The Pennsylvania State University University Park, PA, USA

Use of antibiotics in bovine mastitis treatment in Belgium

[Théron L](#) 1, Reding E 2, Rao AS 1, Detilleux J 3, Bertozzi C 2, Hanzen Ch 1

1 Clinical Department for Production Animals, Veterinary Faculty, University of Liège, Liège, Belgium; 2 Department of Animal Productions, Veterinary Faculty, University of Liège, Liège, Belgium; 3 Research and Development Department, Walloon Herd Agency, Belgium

Antimicrobial resistance in *Salmonella* spp. isolated from adults and fledglings of Yellow-legged gulls (*Larus michahellis*) feeding at a refuse dump

Antillés N, González-Solís J, Garcia-Bocanegra I, [Cerdà-Cuellar M](#)

Bacterial diseases, Centre de Recerca en Sanitat Animal (CRESA), Bellaterra, Barcelona, Spain

Antimicrobial resistance in *E. hirae* isolated from food producing animals

[Peeters L](#) 1, Argudín MA 1, Butaye P 1,2

1 Department of General Bacteriology, Veterinary and Agrochemical Research centre, Brussels, Belgium; 2 Department of Pathology, Bacteriology, and Avian Diseases, Ghent University, Ghent, Belgium

Antimicrobial resistance in *E. faecium* and *E. faecalis* isolated from poultry and bovines

[Peeters L](#) 1, Argudín MA 1, Butaye P 1,2

1 Department of General Bacteriology, Veterinary and Agrochemical Research centre, Brussels, Belgium; 2 Department of Pathology, Bacteriology, and Avian Diseases, Ghent University, Ghent, Belgium

Antimicrobial resistance in *E. coli* isolated from food producing animals

[Peeters L](#) 1, Argudín MA 1, Butaye P 1,2

1 Department of General Bacteriology, Veterinary and Agrochemical Research centre, Brussels, Belgium; 2 Department of Pathology, Bacteriology, and Avian Diseases, Ghent University, Ghent, Belgium

Role and prevalence of antibiosis

Effect of orally administered antimicrobials on resistance development of *E. coli* in chicken – A systematic review

Simoneit C, Burow E, Tenhagen BA, [Kaesbohrer A](#)

Federal Institute for Risk Assessment, Unit Epidemiology and Zoonoses, National Reference Laboratory for Antimicrobial Resistance, Berlin, Germany

Resistance genes in the environment

Isolation frequency and genetic determinants of antibiotic-resistant marine bacteria in aquaculture centers and coastal waters

[Trento I](#) 1, Labella AM 2, Di Cesare A 3, Ghidini V 1, Lleo MM 1

1 Department of Pathology and Diagnostics, University of Verona, Verona, Italy; 2 Department of Microbiology, University of Malaga, Malaga, Spain; 3 Institute of Microbiology and Biomedical Sciences, Polytechnic University of Marche, Ancona, Italy

Quantitative detection of 7 clinically relevant antibiotic-resistance genes in waste water treatment plants

Laht M 1, Karkman A 2, Voolaid V 1, Kisand V 1, Tenson T 1, Virta M 2

1 Institute of Technology, University of Tartu, Tartu, Estonia; 2 Department of Food and Environmental Sciences, University of Helsinki, Helsinki, Finland

Vancomycin resistant *Enterococci* in corvids in Europe and USA

Oravcova V 1,3, Zurek L 4, Ghosh A 4, Guenther S 5, Townsend A 6, Clark A 7, Ellis J 8, Cizek A 2,3, Literak I 1,3

1 Department of Biology and Wildlife Diseases, Faculty of Veterinary Hygiene and Ecology, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 2 Department of Microbiology and Immunology, Faculty of Veterinary Medicine, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 3 CEITEC VFU, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 4 Department of Diagnostic Medicine and Pathobiology, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas, USA; 5 Institute of Microbiology and Epizootics, Veterinary Faculty, Free University Berlin, Berlin, Germany; 6 Department of Wildlife, Fish, and Conservation Biology, University of California at Davis, Davis, CA, USA; 7 Department of Biological Sciences, Binghamton University, Binghamton, NY, USA; 8 Cummings School of Veterinary Medicine, Tufts University, North Grafton, MA, USA

Plasmid-mediated quinolone resistance genes in Enterobacteriaceae bacteria from American crows (*Corvus brachyrhynchos*): high prevalence of bacteria with variable qnrB genes

Halová D 1, Papoušek I 1, Jamborová I 1, Masaříková M 2, Čížek A 2,3, Janecko N 1,4, Zurek L 5, Literák I 1,3

1 Department of Biology and Wildlife Diseases, Faculty of Veterinary Hygiene and Ecology, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 2 Department of Microbiology and Immunology, Faculty of Veterinary Medicine, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 3 CEITEC VFU, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 4 Department of Population Medicine, University of Guelph, Guelph, Canada; 5 Department of Diagnostic Medicine and Pathobiology, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas, USA

Characteristics of extended-spectrum beta-lactamase (esbl)- and carbapenemase producing Enterobacteriaceae isolated from rivers and lakes in Switzerland

Zurfluh K, Hächler H, Nüesch-Inderbinen M, Stephan R

Vetsuisse Faculty, Institute for Food Safety and Hygiene, Zurich, Switzerland

***Escherichia coli* producing beta-lactamases conferring resistance to higher generation cephalosporin in synanthropic and wild birds in Switzerland**

Zurfluh K, Nüesch-Inderbinen M, Stephan R, Hächler H

Vetsuisse Faculty, Institute for Food Safety and Hygiene, Zurich, Switzerland

Prevalence of antimicrobial resistant *Escherichia coli* and quantification of integrons in bovine slaughterhouse effluents

Um MM 1, Bibbal D 1, Kérourédan M 1, Stalder T 2, Barraud O 3, Casellas M 2,

Gaschet M 3, Oswald E 4, Dagot C 2, Ploy MC 3, Brugère H 1

1 INSERM UMR1043, INRA USC1360, ESC INP-ENVT, Université de Toulouse, Toulouse, France;

2 Université de Limoges, EA4330 GRESE, Limoges, France; 3 INSERM UMR 1092, Université

de Limoges, Limoges, France; 4 INSERM UMR1043, INRA USC1360, CHU de Toulouse, Hôpital Purpan, Toulouse, France

Contribution of animal and human faecal sources to the environmental resistome

Rowe W 1, Verner-Jeffreys D 2, Baker-Austin C 2, Maskell D 1, Ryan J 3, Pearce G 1

1 Department of Veterinary Medicine, University of Cambridge, Cambridge, United Kingdom;

2 Centre for Environment, Fisheries and Aquaculture Science, Weymouth, United Kingdom; 3 GlaxoSmithKline, Ware, United Kingdom

Novel class 3 Integron in an *Aeromonas sobria* from a wastewater treatment plant from France

Barraud O 1,2,3, Simo P 1,2,4, Stalder T 1,2,5, Casellas M 5, Dagot C 5, Ploy M-C 1,2,3

1 U1092, INSERM, Limoges, France; 2 UMR-S1092, Université de Limoges, Limoges, France; 3

Laboratoire de Bactériologie-Virologie-Hygiène, CHU Limoges, France; 4 Laboratoire de

Bactériologie, Centre Pasteur du Cameroun, Yaoundé, Cameroun; 5 Groupe de Recherche Eau Sol Environnement, Université de Limoges, France

Comparison of antimicrobial resistomes of human- and wildlife-originating Enterobacteriaceae in protected tropical rainforests: findings from Central African Republic and Ivory Coast

Albrechtova K 1, Petrzalkova K 2,3,4, Leendertz F 5, Janatova M 1, De Nys H 5,

Schubert G 5, Todd A 6, Cizek A 2,7, Literak I 1,2

1 Department of Biology and Wildlife Diseases, Faculty of Veterinary Hygiene and Ecology,

University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 2 CEITEC

VFU, Veterinary and Pharmaceutical University Brno, Brno, Czech Republic; 3 Institute of

Vertebrate Biology, Academy of Sciences of the Czech Republic, v.v.i., Brno, Czech Republic; 4

Liberec Zoo, Liberec, Czech Republic; 5 Research Group Emerging Zoonoses, Robert Koch

Institute, Berlin, Germany; 6 WWF, Dzanga Sangha Protected Areas, Bangui, Central African

Republic; 7 Department of Infectious Diseases and Microbiology, Faculty of Veterinary

Medicine, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic

Occurrence of *Escherichia coli* isolated from stream water, Aguascalientes, Mexico and their virulence and antimicrobial resistance patterns

Ramírez-Castillo FY 1, Harel J 2, Avelar-González FJ 3, Garneau P 2, Loera-Muro A 1,

Guerrero-Barrera AL 1

1 Laboratorio de Biología Celular y Tisular, Departamento de Morfología, Centro de Ciencias

Básicas, Universidad Autónoma de Aguascalientes, Aguascalientes, Ags., México; 2 Centre de

Recherche en Infectiologie Porcine, Faculté de médecine vétérinaire, Université de Montréal,

St-Hyacinthe, Québec, Canada; 3 Laboratorio de Ciencias Ambientales, Departamento de

Fisiología y Farmacología, Centro de Ciencias Básicas, Universidad Autónoma de

Aguascalientes, Aguascalientes, Aguascalientes, México

A novel subgroup of IS3 family elements and their role in forming composite antibiotic-resistance transposons

Petrova M 1, Kurakov A 2, Shcherbatova N 1, Mindlin S 1

1 Institute of Molecular Genetics, Russian Academy of Sciences, Moscow, Russia; 2 Moscow

State University, Faculty of Biology, Moscow, Russia

14.00-15.30 Oral session III

- 14.00 ESBL-producing *E. coli* in farm animals - A cross-sectional study in Germany**
Hering J 1, Hille K 1, Friese A 2, von Münchhausen C 1, Rösler U 2, Kreienbrock L 1
1 Institute of Biometry, Epidemiology and Information Processing, WHO Centre for Research and Training in Veterinary Public Health, University of Veterinary Medicine Hanover, Germany; 2 Institute for Animal Hygiene and Environmental Health, Department of Veterinary Medicine, Free University Berlin, Germany
- 14.15 Occurrence of extended-spectrum β -lactamase (esbl) and ampc-producing *E. coli* on dairy and beef cattle farms in Southern Germany**
Schmid A 1,3, Hörmansdorfer S 1, Messelhäusser U 1, Käsbohrer A 2, Mansfeld R 3
1 Bavarian Health and Food Safety Authority, Oberschleissheim, Germany; 2 Federal Institute for Risk Assessment, Berlin, Germany; 3 Clinic for Ruminants, LMU Munich, Oberschleissheim, Germany
- 14.30 Epidemiology and characterization of methicillin-resistant *Staphylococcus sciuri* in healthy chickens**
Nemeghaire S 1, Argudín MA 1, Haesebrouck F 2, Butaye P 1,2
1 Department of Foodborne bacterial zoonoses and antimicrobial resistance, Veterinary and Agrochemical Research centre, Brussels, Belgium; 2 Department of Pathology, Bacteriology and Avian diseases, Faculty of Veterinary Medicine, Ghent University, Ghent, Belgium
- 14.45 Antimicrobial resistance trends in indicator *Escherichia coli* isolated from animals at slaughter**
Wasył D, Hoszowski A, Zajac M
Department of Microbiology, National Veterinary Research Institute, Pulawy, Poland
- 15.00 The first outbreak of a multidrug resistant *Acinetobacter baumannii* strain on a Dutch animal intensive care unit**
Leendertse M 1,2, Wagenaar JA 1,3, Hordijk J 1, Robben JH 4, Broens E 1
1 Department of Infectious Diseases and Immunology, Faculty of Veterinary Medicine, Utrecht University, Utrecht, the Netherlands; 2 Department of Medical Microbiology, Academic Medical Center, Amsterdam, University of Amsterdam, Amsterdam, the Netherlands; 3 Central Veterinary Institute of Wageningen UR, Lelystad, the Netherlands; 4 Department of Clinical Sciences of Companion Animals, Faculty of Veterinary Medicine, Utrecht University, Utrecht, the Netherlands
- 15.15 Antimicrobial use and resistance profile in faecal *Escherichia coli* in sows and their offspring during the farrowing period**
Callens B 1, Faes C 2, Maes D 3, Boyen F 4, Haesebrouck F 4, Dewulf J 1
1 Veterinary Epidemiology Unit, Department of Reproduction, Obstetrics and Herd Health, Faculty of Veterinary Medicine, Ghent University, Belgium; 2 Inter-university Institute of Biostatistics and statistical Bioinformatics, Hasselt University, Belgium; 3 Porcine Health Unit, Department of Reproduction, Obstetrics and Herd Health, Faculty of Veterinary Medicine, Ghent University, Belgium; 4 Department of

15.30-16.00 Coffee Break

16.00-16.45 Oral session IV

- 16.00 Genotypic surveillance of tetracycline resistance in Canadian beef cattle 2002-2011**
McGowan M 1, Scott HM 1, Vinasco J 1, Reid-Smith R 2, Gow S 2, Janecko N 2, Daignault D 2
1 Diagnostic Medicine and Pathobiology, Kansas State University, Manhattan, KS, USA; 2 Public Health Agency of Canada, Canada
- 16.15 Antimicrobial susceptibility analysis of *Salmonella enterica* isolated from food-producing animals, animal feed and food products of animal origin, in Portugal**
Clemente L 1, Manageiro V 2,3, Ferreira E 2,3, Jones-Dias D 2,3, Correia I 1, Albuquerque T 1 Themudo P 1, Caniça M 2,3
1 INIAV, Instituto Nacional de Investigação Agrária e Veterinária, Lisbon, Portugal; 2 Laboratório Nacional de Referência das Resistências aos Antimicrobianos, Instituto Nacional de Saúde, Lisbon, Portugal; 3 Centro de Estudos de Ciência Animal (ICETA), Universidade do Porto, Porto, Portugal
- 16.30 Revealing of the human gut microbes antibiotic resistance from microbiome sequencing data**
Wang S 1, Shen Z 2, Zhang Q 2, Wang Y 3, Shen J 3, Wang J 4
1 School of Medicine, University of Virginia, Charlottesville VA, USA; 2 College of Veterinary, Iowa State University, Ames IA, USA; 3 College of Veterinary, China Agriculture University, Beijing, P.R.China; 4 College of Veterinary, Shanxi Agriculture University, Shanxi, P.R.China
- 16.45 ESBL prevalence in French calves at slaughterhouse**
Haenni M 1, Châtre P 1, Bour M 1, Métayer V 1, Madec J-Y 1, Gay E 2
1 Agence Nationale de Sécurité Sanitaire, Unité Antibiorésistance et Virulence Bactériennes, Lyon, France; 2 Agence Nationale de Sécurité Sanitaire, Unité Epidémiologie, Lyon, France

17.00-17.40 Invited Lecture II

PK/PD modeling and the rational selection of dosage regimens for the prudent use of antimicrobial drugs

Mark Papich

Raleigh, NC, USA

09.00-10.30 Oral session V

- 09.00** **A mathematical model to estimate environmental loading of antibiotics following routine parenteral administration in dairy cattle**
Singer RS 1, Silley P 2
1 Department of Veterinary and Biomedical Sciences, University of Minnesota, St. Paul, USA; 2 MB Consult Limited, Southampton, UK and University of Bradford, UK
- 09.15** **Impact of two colistin dosages on piglets intestinal microbiota**
Fleury MA 1,2,3, Jouy E 1,2, Eono F 1,2, Cariolet R 1,2, Blanquet-Diot S 3, Alric M 3, Kempf I 1,2
1 Anses, Laboratoire de Ploufragan-Plouzané, Ploufragan, France; 2 Université Européenne de Bretagne, Rennes, France; 3 Clermont Université, Université d'Auvergne, Centre de Recherche en Nutrition Humaine Auvergne, EA 4678 CIDAM, Conception, Ingénierie et Développement de l'Aliment et du Médicament, Clermont-Ferrand, France
- 09.30** **Quantification of the use of antimicrobials on dairy farms in Flanders, Belgium**
Stevens M, Piepers S, De Vlieghe S
M-team and Mastitis and Milk Quality Research Unit, Department of Reproduction, Obstetrics and Herd Health, Faculty of Veterinary Medicine, Ghent University, Belgium
- 09.45** **Heterogeneity in antimicrobial resistance patterns in the food production chains and their linkage to antimicrobial usage**
Kaesbohrer A, Schroeter A, Tenhagen B-A, Guerra-Román B, Helmuth R, Appel B
Department Biological Safety, National Reference Laboratory for Antimicrobial Resistance, Federal Institute for Risk Assessment, Berlin, Germany
- 10.00** **Molecular characterisation of antibiotic resistant bacteria isolated from farmed catfish and humans in Vietnam**
Nguyen HNK 1, Van TTH 2, Smooker PM 2, Coloe PJ 2
1 Nong Lam University, HCM City, Vietnam; 2 RMIT University, Melbourne, Victoria, Australia
- 10.15** **Linking antimicrobial use and antimicrobial resistance in veterinary medicine at national level: is there a measurable correlation? Report on 7 European countries**
Chantziaras I 1, Boyen F 2, Callens B 1, Dewulf J 1
1 Veterinary Epidemiology Unit, Department of Reproduction, Obstetrics and Herd Health, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium; 2 Department of Pathology, Bacteriology and Avian Diseases, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium
- 10.30-11.00 Coffee Break
- 11.00-11.20** **Poster session II viewing**

11.20-12.00 Invited Lecture III

Environmental reservoirs of antibiotic resistance genes

Elizabeth Wellington

Coventry, UK

12.00-12.30 Oral session VI

12.00 Characterization of multidrug resistant, ESBL-producing Enterobacteriaceae in fresh culinary herbs imported from Southeast Asia

Veldman K 1, Kant A 1, Wit B 2, Mevius D 1

1 Department of Bacteriology and TSE's, Central Veterinary Institute (CVI) of Wageningen UR, Lelystad, the Netherlands; 2 Consumer and Safety Division, Netherlands Food and Consumer Product Safety Authority (NVWA), Utrecht, the Netherlands

12.15 Urban brown rats as frequent fecal carrier of ESBL- *E.coli*

Guenther S 1, Wuttke J 1, Bethe A 1, Vojtěch J 2, Schaufler K 1, Semmler T 1, Ulrich RG 3, Wieler LH 1, Ewers C 4

1 Institute of Microbiology and Epizootics, Veterinary Faculty, Freie Universität Berlin, Berlin, Germany; 2 Department of Biology and Wildlife Diseases, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 3 Institute for Novel and Emerging Infectious Diseases, Friedrich-Loeffler-Institut, Federal Research Institute for Animal Health, Greifswald - Insel Riems, Germany; 4 Institute of Hygiene and Infectious Diseases of Animals, Justus von Liebig Universität Giessen, Giessen, Germany

12.30-13.15 Lunch

13.15-14.00 Poster Discussion Session II

Molecular epidemiology of antimicrobial resistance

In vivo spread of MLSb resistance – A model study

Marosevic D, Cervinkova D, Vlkova H, Jaglic Z

Department of Food and Feed Safety, Veterinary Research Institute, Brno, Czech Republic

Characterization of qnrD-positive *Salmonella* isolates from Spain, Italy and the Netherlands

Veldman K 1, van Essen-Zandbergen A 1, Franco A 2, De Frutos Escobar C 3, Mevius D 1

1 Department of Bacteriology and TSE's, Central Veterinary Institute (CVI) of Wageningen UR, Lelystad, the Netherlands; 2 Istituto Zooprofilattico Sperimentale Lazio e Toscana, Rome, Italy; 3 Laboratorio Central de Veterinaria de Algete (MARM), Madrid, Spain

Presence of two different erm(c)-carrying plasmids in the same methicillin-resistant *Staphylococcus aureus* CC398 isolate from a broiler farm

Wendlandt S 1, Kadlec K 1, Feßler AT 1, Schwarz S 1, van Duijkeren E 2
1 Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut (FLI), Neustadt-Mariensee, Germany; 2 Centre for Infectious Disease Control Netherlands (CIb), National Institute for Public Health and the Environment (RIVM), Bilthoven, the Netherlands

Analysis of resistance pheno- and genotypes of *Yersinia ruckeri* isolated from diseased fish

Huang Y 1, Michael GB 2, Kaspar H 3, Schwarz S 2, Runge M 3, Steinhagen D 4
1 Fish Disease Research Unit, University of Veterinary Medicine Hannover, Foundation, Hannover, Germany; 2 Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut (FLI), Neustadt-Mariensee, Germany; 3 Federal Office of Consumer protection and Food safety (BVL), Berlin, Germany; 4 Lower Saxony State Office for Consumer Protection and Food Safety (LAVES), Food and Veterinary Institute Braunschweig/Hannover, Germany

MRSA in horses: recent developments with respect to further evolution of ST398,spat011 to ambulatory care

Cuny C 1, Abd El-Bary M 1, Nurnus U 2, Witte W 1
1 Robert Koch Institute, Wernigerode Branch, Wernigerode, Germany; 2 Labor Böse, Harsum, Germany

Glaucous gull (*Larus hyperboreus*) in Svalbard as a source of enteroaggregative *Escherichia coli* ST448 with a novel variant of ACT AmpC beta-lactamase

Literak I 1,2, Wojczulanis-Jakubas K 3, Chroma M 4, Manga I 2,5, Vojtech J 1,2, Sedlakova Htoutou M 4, Jamborova I 1, Cizek A 2,5
1 Department of Biology and Wildlife Diseases, Faculty of Veterinary Hygiene and Ecology, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 2 CEITEC VFU, Veterinary and Pharmaceutical University Brno, Brno, Czech Republic; 3 Department of Vertebrate Ecology and Zoology, University of Gdansk, Gdansk, Poland; 4 Department of Microbiology, Faculty of Medicine and Dentistry, Palacky University Olomouc, Olomouc, Czech Republic; 5 Department of Infectious Diseases and Microbiology, Faculty of Veterinary Medicine, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic

Antimicrobial resistance in avian pathogenic *Escherichia coli* (APEC) from poultry in the US and elsewhere: do profiles provide insight into the influence of production practices on their selection?

Logue CM 1, Sherwood JS 2, Wannemuehler Y 1, Hussein A 3, Dias da Silveria W 4, Barbieri NL 5, Horn F 5, Rosario C 6, Nolan LK 1
1 Department of Veterinary Microbiology and Preventive Medicine, College of Veterinary Medicine, Iowa State University, Ames IA, USA; 2 Department of Veterinary and Microbiological Sciences, North Dakota State University, Fargo ND, USA; 3 Department of Avian and Rabbit Medicine, Faculty of Veterinary Medicine, Zagazig University, Egypt; 4 Departamento Genetica, Evolucao e Bioagentes, Instituto de Biologica, Universidade Estadual de Campinas, Campinas, Brazil; 5 Departamento de Biofísica, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil; 6 Department of Medicina and Zootecnia De Aves, Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autonoma de Mexico, Mexico

(R-)Evolutions in *Salmonella* epidemiology relevant for antimicrobial resistance

Wasył D, Zając M, Hosiowski A
Department of Microbiology, National Veterinary Research Institute, Pulawy, Poland

ESBL/AmpC-beta-lactamase producing *E. coli* in pigs, veal calves, dairy cows,

poultry and meat in 2012

van Essen-Zandbergen A 1, Kant A 1, Wit B 2, Veldman K 1, Mevius D 1

1 Department of Bacteriology, Central Veterinary Institute (CVI) of Wageningen UR, Lelystad, the Netherlands; 2 Consumer and Safety Division, Netherlands Food and Consumer Product Safety, Ministry of Economic Affairs, Utrecht, the Netherlands

Clonal distribution of *Escherichia coli* lineages harbouring plasmid-mediated resistance to cephalosporins and fluoroquinolones isolated from rooks in Europe

Jamborova I 1, Vojtech J 1,2, Dolejska M 1,2, Guenther S 3, Uricariu R 1, Drozdowska J 1, Papousek I 1, Cizek A 2,4, Literak I 1,2

1 Department of Biology and Wildlife Diseases, Faculty of Veterinary Hygiene and Ecology, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 2 CEITEC, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 3 Institute of Microbiology and Epizootics, Veterinary Faculty, Free University Berlin, Berlin, Germany; 4 Department of Infectious Diseases and Microbiology, Faculty of Veterinary Medicine, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic

Expanded-spectrum cephalosporins resistant Enterobacteriaceae carried by healthy horses in France

Douard G 1, Tapprest J 2, Le Hello S 3, Sevin C 2, Brisabois A 1, Laugier C 2, Granier SA 1

1 Laboratory for Food Safety, ANSES, Maisons-Alfort, France; 2 Laboratory for Equine Diseases, ANSES, Dozulé, France; 3 National reference centre for Salmonella, Shigella and E. coli, Institut Pasteur, Paris, France

Fast and simple molecular typing of *Staphylococcus aureus* using the double locus sequence typing (DLST) approach

Vranckx K 1, Basset P 2, Blanc D 2, Janssens K 1

1 Applied Maths NV, Sint-Martens-Latem, Belgium; 2 Centre Hospitalier Universitaire Vaudois, Lausanne, Vaudois, Switzerland

Characterization of CTX-M-1 and CTX-M-15-producing *Escherichia coli* isolates of bovine and porcine origin

Kohoutova L 1, Dolejska M 2,3, Cizek A 1,2

1 Department of Infectious Diseases and Microbiology, Faculty of Veterinary Medicine, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 2 CEITEC VFU, Veterinary and Pharmaceutical University Brno, Brno, Czech Republic; 3 Department of Biology and Wildlife Diseases, Faculty of Veterinary Hygiene and Ecology, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic

Genotyping and antimicrobial resistance of *Staphylococcus aureus* isolates from diseased turkey

Argudín MA 1, Cariou N 2, Salandre O 3, Le Guennec J 4, Nemeghaire S 1, Butaye P 1,5

1 Department of General Bacteriology, Veterinary and Agrochemical Research centre, Brussels, Belgium; 2 Chêne Vert Conseil Loudéac, Loudéac, France; 3 Chêne Vert Conseil Chateaubourg, Chateaubourg, France; 4 Labofarm, Loudéac, France; 5 Department of Pathology, Bacteriology, and Avian Diseases, Ghent University, Ghent, Belgium

Metal and disinfectant resistance genes among animal *Staphylococcus aureus* isolates from Germany

Argudín MA 1,2, Lauzat B 1, Kraushaar B 1, Kelner-Burgos I 1, Fetsch A 1, Tenhagen

BA 1, Guerra B 1

1 Department of Biological Safety, Federal Institute for Risk Assessment, BfR, Berlin, Germany; 2 Department of General Bacteriology, Veterinary and Agrochemical Research centre, Brussels, Belgium

Accessing the molecular traits of third-generation cephalosporin resistance in *Escherichia coli* recovered from farm animals

Jones-Dias D 1,2, Manageiro V 1,2, Ferreira E 1,2, Caniça M 1,2

1 National Reference Laboratory of Antimicrobial Resistances, National Institute of Health, Lisbon, Portugal; 2 Centre for the Study of Animal Sciences (ICETA), University of Oporto, Oporto, Portugal

IncX plasmids as highly disseminated vectors of antibiotic resistance genes to beta-lactams, carbapenems and fluoroquinolones in Enterobacteriaceae

Dolejska M 1,2, Dobiasova H 1,2

1 Department of Biology and Wildlife Diseases, Faculty of Veterinary Hygiene and Ecology, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 2 CEITEC VFU, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic

Plasmid-mediated fluoroquinolone resistance in *Aeromonas* isolates from tropical ornamental fish and koi carps

Dolejska M 1,2, Dobiasova H 1,2, Kutilova I 1, Piackova V 3, Vesely T 4, Cizek A 2,5

1 Department of Biology and Wildlife Diseases, Faculty of Veterinary Hygiene and Ecology, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 2 CEITEC VFU, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic; 3 University of South Bohemia, Vodnany, Czech Republic; 4 Veterinary Research Institute, Brno, Czech Republic; 5 Department of Infectious Diseases and Microbiology, Faculty of Veterinary Medicine, University of Veterinary and Pharmaceutical Sciences Brno, Brno, Czech Republic

Dramatic increase of AmpC- and ESBL- producing d-Tartrate-positive *Salmonella enterica* serotype Paratyphi B from broilers in Belgium, 2008-2010

Doublet B 1, Praud K 1, Cloeckeaert A 1, Tran T 2, Argudín MA 2, Patrick Butaye P 2

1 Institut National de la Recherche Agronomique (INRA), UMR1282, Infectiologie et Santé Publique, Nouzilly, France; 2 Department of Bacteriology and Immunology, Veterinary and Agrochemical Research Centre, VAR-CODA-CERVA, Ukkel, Belgium

Dosage regimens of antimicrobial drugs

Influence of the solvent system on doxycycline epimerisation as chance for resistance selection

Jutglar M, Foradada M, Casas X, Caballero F

Research and Development, Laboratorios Divasa-Farmavic SA, Gurb-Vic, Spain

Potential resistance selection associated to the solvent system used in doxycycline commercial oral solutions

Caballero F, Casas X, Foradada M, Jutglar M

Research and Development, Laboratorios Divasa-Farmavic SA, Gurb-Vic, Spain

Amoxicillin as a risk factor associated to the emergence of *Escherichia coli* resistant to cephalosporins in a pig farm

Cameron-Veas K 1, Solà-Ginés M 1, Moreno MA 2, Fraile L 3, Migura L 1

1 Centre de Recerca en Sanitat Animal (CRESA), Universitat Autònoma de Barcelona, Spain; 2 Facultad de veterinaria, Universidad Complutense Madrid, Spain; 3 Departamento de Producción Animal, Universidad de Lleida, Spain

Emerging antimicrobial resistance mechanisms in animal pathogens

Genotypic and phenotypic characterization of methicillin-resistant *Staphylococcus pseudintermedius* (mrsp) isolated from dogs and cats in Japan

Bardiau M 1, Yamazaki K 1,2, Ote I 1, Duprez J-N 1, Misawa N 3, Mainil J 1

1 Laboratory of Bacteriology, Department of Infectious Diseases, Faculty of Veterinary Medicine, University of Liège, Liège, Belgium; 2 Division of Bioenvironmental Science, Frontier Science Research Center, University of Miyazaki, Japan; 3 Laboratory of Veterinary Public Health, Department of Veterinary Science, Faculty of Agriculture, University of Miyazaki, Japan

Identification of colistin resistance among pathogenic and non-pathogenic coliforms isolates from human and animal origin

Muylaert A, Duprez J-N, Mainil J

Laboratory of Bacteriology, Department of Infectious Diseases, Faculty of Veterinary Medicine, University of Liège, Liège, Belgium

Study of therapeutics strategies for piglets postweaning diarrhea: in vitro characterization of the colistin outcome in digestive tract, resistance and transfert of neomycin resistance in *E.coli* 0149 strains

Thériault W 1, Rhouma M 1, L-Lewandowski S 1, Archambault M 2, Letellier A 1

1 NSERC Industrial Research Chair in Meat Safety, Faculty of veterinary medicine, Université de Montréal, Saint-Hyacinthe, Canada; 2 GREMIP Research Group on Infectious Diseases of Swine, Faculty of veterinary medicine, Université de Montréal, Saint-Hyacinthe, Canada

Emerging antimicrobial resistance mechanisms in zoonotic pathogens

Antimicrobial resistance mechanisms in non-typhoidal *Salmonella* isolates of healthy pigs and chickens in Belgium (2008-2011)

Smet A 1, de Jong A 2, Ludwig C 2, Stephan B 2, De Graef E 1, Vanrobaeys M 3, Haesebrouck F 1

1 Department of Pathology, Bacteriology and Avian Diseases, Faculty of Veterinary Medicine, Ghent University, Ghent, Belgium; 2 Bayer Animal Health GmbH, Leverkusen, Germany; 3 Animal Health Care Flanders, Torhout, Belgium

Identification of a large multiresistance plasmid in a feline methicillin-resistant *Staphylococcus epidermidis* st5 strain

Weiß S, Kadlec K, Feßler TA, Schwarz S

Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut (FLI), Neustadt-Mariensee, Germany

Ciprofloxacin-resistant *Escherichia coli* isolated from the intestinal microbiota of goats in Greece in the absence of selective pressure

Filioussis G 1, Tzivara A 2, Petridou E 1, Giadinis ND 3, Bourriel RA 4, Kritas SK 1

1 Department of bacteriology and infectious diseases, Aristotle University, Thessaloniki, Greece; 2 Clinic of Medicine, Faculty of Veterinary Medicine, University of Thessaly, Karditsa, Greece; 3 Clinic of Productive Animal Medicine, Aristotle University of Thessaloniki, Thessaloniki, Greece; 4 Laboratory of Microbiology and Parasitology, Faculty of Veterinary

Distribution of extended-spectrum cephalosporin resistance determinants in *Salmonella enterica* and *Escherichia coli* isolated from broilers in southern Japan

Shahada F 1,2, Chuma T 3, Kosugi G 3, Kusumoto M 1, Iwata T 1, Akiba M 4

1 Bacterial and Parasitic Disease Research Division, National Institute of Animal Health, Tsukuba, Ibaraki, Japan; 2 The Nelson Mandela African Institute of Science and Technology, Arusha, Tanzania ; 3 Laboratory of Veterinary Public Health, Joint Faculty of Veterinary Medicine, Kagoshima University, Korimoto, Kagoshima , Japan; 4 Graduate School of Life and Environmental Sciences, Osaka Prefecture University, Izumisano, Osaka, Japan

Emergence of cephalosporin resistant *Escherichia coli* in the broiler production chain in a country with a low antimicrobial usage profile

Norström M 1, Slette-meås JS 2, Løvland A 3, Mo SS 2, Urdahl AM 1, Sunde M 2

1 Department of Health Surveillance, Norwegian Veterinary Institute, Oslo, Norway; 2 Department of Laboratory Services, Norwegian Veterinary Institute, Oslo, Norway; 3 Nortura, Oslo, Norway

Antimicrobial resistance and virulence common themes

Non resistance related phenotypic characteristics of plasmid-cured variants of wildtype ESBL *E. coli* isolates of ST131 and ST648

Schaufler K 1, Semmler T 1, Wieler LH 1, Ewers C 2, Guenther S 1

1 Institute of Microbiology and Epizootics, Freie Universität Berlin, Berlin, Germany; 2 Institute of Hygiene and Infectious Diseases of Animals, Justus-Liebig-Universität Giessen, Giessen, Germany

Peristaltic drug export mechanism of the multidrug exporter AcrB

Yamasaki S 1,2,3, Nishino K 1, Nakashima R 2, Sakurai K 2, Yamaguchi A 2,3

1 Laboratory of Microbiology and Infectious Diseases, 2 Department of Cell Membrane Biology, Institute of Scientific and Industrial Research, Osaka University, Osaka, Japan; 3 Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, Japan

Inhibitor-bound structures of bacterial major multidrug efflux transporters, AcrB and MexB

Katsuhiko H 1,2, Ryosuke N 2, Keisuke S 2, Seiji Y 1,2, Kunihiko N 3, Akihito Y 2

1 Department of Cell Biology, Graduate School of Pharmaceutical Sciences, Osaka University, Osaka, Japan; 2 Department of Cell Membrane Biology, The Institute of Scientific and Industrial Research (ISIR), Osaka University, Osaka, Japan; 3 Laboratory of Microbiology and Infectious Diseases, The Institute of Scientific and Industrial Research (ISIR), Osaka University, Osaka, Japan

Bile-mediated activation of the *acrAB* and *tolC* efflux genes occurs mainly through transcriptional derepression of *ramA* in *Salmonella typhimurium*

Baucheron S 1, Nishino K 2, Canepa S 1, Maurel MC 1, Coste F 3, Monchaux I 1, Cloeckert A 1, Giraud E 1

1 Institut National de la Recherche Agronomique, Nouzilly, France; 2 Institute of Scientific and Industrial Research, Osaka, Japan; 3 Centre National de la Recherche Scientifique, Orléans, France

***Staphylococcus epidermidis* harbouring multiresistant profile and *ica* operon**

recovered from birds of prey in Portugal

Sousa M 1,2,3, Igrejas G 3, Silva N 1,3, Silva F 4, Canica M 2, Torres C 5, Poeta P 1,3
1 Department of Animal and Veterinary Sciences (CECAV), University of Trás-os-Montes and Alto Douro (UTAD), Vila Real, Portugal; 2 National Institute of Health (INSA), Lisboa, Portugal; 3 Department of Genomics and Biotechnology (IBB-CGB), UTAD, Portugal; 4 Will birds' recovering center (CRAS), UTAD, Vila Real, Portugal; 5 Food and Agriculture Department, University of La Rioja (UR), Logroño, Spain

Extended-spectrum β -lactamases in Shiga toxin-producing *Escherichia coli* isolates from cattle

Ewers C 1, Stolle I 1, Stamm I 2, Kopp PA 2, Guenther S 3, Wieler LH 3, Bethe A 3, Prenger-Berninghoff E 1
1 Department of Veterinary Medicine, Institute of Hygiene and Infectious Diseases of Animals, Justus-Liebig-Universität Giessen, Germany; 2 Vet Med Labor, IDEXX Division, Ludwigsburg, Germany; 3 Department of Veterinary Medicine, Institute of Microbiology and Epizootics, Freie Universität Berlin, Berlin, Germany

Alternatives for antibiotics

Clearance of *Escherichia coli* O157:H7 infection in calves by rectal administration of bovine lactoferrin

Kieckens E 1, Rybarczyk J 1, Vanrompay D 2, Remon JP 3, De Zutter L 4, Cox E 1
1 Department of Virology, Parasitology and Immunology, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium; 2 Department of Molecular Biotechnology, Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium; 3 Department of Pharmaceutics, Faculty of Pharmaceutical Sciences, Ghent University, Ghent, Belgium; 4 Department of Veterinary Public Health and Food Safety, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium

The use of Sodium salizylat in acute inflammation in turkeys

Krautwald-Junghanns M-E 1, Cramer K 1, Boehme J 1, Schmidt V 1, Ungemach F 2
1 Clinic for Birds and Reptiles, University Leipzig, Leipzig, Germany; 2 Institute for Pharmacology, Pharmacy and Toxicology, University Leipzig, Leipzig, Germany

Meat pathogens control with plant extracts

Tayel A 1, El-Tras WF 2, Abdel-Monem OA 3
1 Department of Industrial Biotechnology, Genetic Engineering and Biotechnology Research Institute, Minoufiya University, Egypt; 2 Department of Hygiene and Preventive Medicine (Zoonoses), Faculty of Veterinary Medicine, Kafrelsheikh University, Egypt; 3 Department of Botany, Faculty of Science, Tanta University, Egypt

Removal of bacteria from stallion semen by colloid centrifugation

Morrell JM, Klein C, Erol E, Lundeheim N, Troedsson M
Clinical Sciences, SLU, Uppsala, Sweden

Potential alternatives to antimicrobials in pig production based on perceived effectiveness, feasibility and return on investment

Postma M 1, Stärk K 2, Sjölund M 3, grosse Beilage E 4, Okholm E 5, Iten D 6, Belloc C 7, Dewulf J 1
1 Ghent University, Faculty of Veterinary Medicine, Department of Reproduction, Obstetrics and Herd Health, Unit of Veterinary Epidemiology, Merelbeke, Belgium; 2 Safe Food Solutions Inc. SAFOSO AG, Bern, Switzerland; 3 National Veterinary Institute SVA, Uppsala, Sweden; 4

Field Station for Epidemiology, University of Veterinary Medicine Hannover, Bakum, Germany; 5 Danish Agriculture & Food Council, Pig Research Centre, Copenhagen, Denmark; 6 ETH Zürich, Institute for Environmental Decisions (IED) Consumer Behavior, Zürich, Switzerland; 7 Oniris, Nantes, France

Unique antimicrobial peptides from lysozyme with potent anti-inflammatory activities

Hamasaki K, Ibrahim H

Department of Biochemistry and Biotechnology, Graduate School of Agricultural Sciences, Kagoshima University, Kagoshima, Japan

Review on use of bacteriophages against pathogenic bacterial in human therapy, veterinary medicine and food safety. Focus on the effectiveness of treatment

Chantain-Ly MH

Department Innovation Production Agro-Alimentaire et Qualité (IPAAQ), ISARA-LYON, Lyon, France

14.00-15.30 Oral session VII

14.00 Emission of methicillin-resistant *Staphylococcus aureus* (mrsa) from poultry and pig farms in Germany

Friese A 1, Schulz J 2, Tenhagen B-A 3, Fetsch J 3, Hartung J 2, Rösler U 1
1 Free University Berlin, Department of Veterinary Medicine, Institute for Animal Hygiene and Environmental Health, Berlin, Germany; 2 Institute for Animal Hygiene, Animal Welfare and Farm Animal Behaviour, University of Veterinary Medicine Hannover, Foundation, Hannover, Germany; 3 Federal Institute for Risk Assessment, Department Biological Safety, Berlin, Germany

14.15 Prevalence and characteristics of ESBL-producing *E. coli* in Dutch recreational waters influenced by wastewater treatment plants

Blaak H, de Kruijf P, Veenman C, Hamidjaja RA, de Roda Husman AM, Schets FM
Centre for Zoonoses and Environmental Microbiology, National Institute for Public Health (RIVM), Bilthoven, the Netherlands

14.30 Degradation of sulfonamide antibiotics by *Microbacterium* sp. strain BR1 – potential for a novel bioremediation strategy or an environmental threat due to spread of antibiotic resistance?

Cichocka D 1, Ricken B 1, Kolvenbach BA 1, Kohler HPE 2, Corvini PFX 1
1 Institute for Ecopreneurship, School of Life Sciences, FHNW - University of Applied Sciences and Arts Northwestern Switzerland, Muttenz, Switzerland; 2 Department of Environmental Microbiology, Eawag - Swiss Federal Institute of Aquatic Science and Technology, Dübendorf, Switzerland

14.45 Fate and effect of manure from sulfadiazine or difloxacin treated pigs in bulk soil and rhizosphere

Jechalke S 1, Kopmann C 1, Focks A 2, Rosendahl I 3, Groeneweg J 4, Ding G-C 1, Siemens J 3, Heuer H 1, Smalla K 1
1 Julius Kühn-Institut - Federal Research Centre for Cultivated Plants (JKI), Institute for Epidemiology and Pathogen Diagnostics, Braunschweig, Germany; 2 Wageningen University, Aquatic Ecology and Water Quality Management, Wageningen, the

Netherlands; 3 Institute of Crop Science and Resource Conservation, Soil Science and Ecology, University of Bonn, Bonn, Germany; 4 Institute of Bio- and Geosciences 3, Agrosphere, Forschungszentrum Jülich GmbH, Jülich, Germany

15.00 Field-scale leaching and survival of tetracycline-resistant bacteria and *Escherichia coli* from injected pig slurry

Bech T, Mostofa Amin MG, Olsen P, Kjaer J, Jacobsen CS
Geochemistry, GEUS, Copenhagen, Denmark

15.15 Could hospital effluents play a role in the antibiotic resistance dissemination in the environment?

Stalder T 1,2,3, Gaschet M 1,2, Barraud O 1,2, Casellas M 3, Dagot C 3,
Ploy M-C 1,2

1 Inserm, U1092, Limoges, France; 2 Université de Limoges, UMR-S1092, Limoges, France; 3 Université de Limoges, EA4330 GRESE-ENSIL, Limoges, France

15.30-16.00 Coffee Break

16.00-16.40 Invited Lecture IV

A new emerging problem: Carbapenemases-producing microorganisms are also present in food producing animals, their environment and wild birds
Beatriz Guerra-Roman

Berlin, Germany

16.40-17.55 Oral session VIII

16.40 Analysis of the genetic context of the lincosamide-pleuromutilin-streptogramin a resistance gene *Isa(e)* in methicillin-resistant *Staphylococcus aureus* of human, animal and food origin using overlapping pcr-assays

Wendlandt S 1, Ho J 2, Kadlec K 1, Feßler AT 1, Ehricht R 3, Monecke S 3,4,
O'Donoghue M 2, Boost M 2, Schwarz S 1

1 Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut (FLI), Neustadt-Mariensee, Germany; 2 The Hong Kong Polytechnic University, Hong Kong, China; 3 Alere Technologies GmbH, Jena, Germany; 4 Institute for Medical Microbiology and Hygiene, Technical University of Dresden, Dresden, Germany

16.55 Tetracycline resistance in pigs, pig farmers and their families in the Netherlands: risk factors for human carriage

Schmitt H 1, Bhumibhamon G 1, Hoekstra J 1, Dohmen W 1, Wagenaar JA 2,
Heederik D 1

1 Institute for Risk Assessment Sciences, Utrecht University, Utrecht, the Netherlands; 2 Department of Infectious Diseases and Immunology, Faculty of Veterinary Medicine, Utrecht University, Utrecht, the Netherlands

17.10 Emergence of OXA-48 carbapenemase-producing *Escherichia coli* and *Klebsiella pneumoniae* in dogs

Stolle I 1, Prenger-Berninghoff E 1, Stamm I 2, Scheufen S 1, Hassdenteufel E 3, Guenther S 4, Bethe A 4, Pfeifer Y 5, Ewers C 1

1 Department of Veterinary Medicine, Justus-Liebig-University Giessen, Institute of Hygiene and Infectious Diseases of Animals, Giessen, Germany; 2 Vet Med Labor, IDEXX Division, Ludwigsburg, Germany; 3 Department Small animals, Justus-Liebig-University Giessen, Giessen, Germany; 4 Department of Veterinary Medicine, Institute of Microbiology and Epizootics, Freie Universität Berlin, Berlin, Germany; 5 FG13 Nosocomial Infections, Robert Koch-Institut, Wernigerode, Germany

17.25 Emissions of ESBL/AmpC-producing *E. coli* from broiler and pig fattening farms in Germany

*Laube H 1, Friese A 1, von Salviati C 1, Guerra B 2, Käsbohrer A 2, Roesler U 1
1 Institute for Animal Hygiene and Environmental Health, Free University Berlin, Berlin, Germany; 2 Federal Institute for Risk Assessment, Department Biological Safety, Berlin, Germany*

17.40 Detection of ESBL-producing *Escherichia coli* on flies at poultry farms

*Blaak H, van Hoek AHAM, Hamidjaja RA, de Heer L, Schets F M, de Roda Husman AM
Centre for Zoonoses and Environmental Microbiology, National Institute for Public Health (RIVM), Bilthoven, the Netherlands*

**20.00 Symposium Dinner
Castle of the Counts**

3 July 2013

09.00-09.40 Invited Lecture V

MRSP/MSSP: antibiotic resistance, virulence and population structure
Arshnee Moodley
Copenhagen, Denmark

09.40-10.20 Oral session IX

09.40 Regulation of the AcrAB multidrug efflux pump in *Salmonella enterica* serovar Typhimurium

Yamasaki S 1, Baucheron S 2, Giraud E 2, Yamasaki S 1, Hayashi K 1, Nakashima R 1, Sakurai K 1, Cloeckert A 2, Nishino K 1
1 Institute of Scientific and Industrial Research, Osaka University, Osaka, Japan; 2 Institut National de la Recherche Agronomique, Nouzilly, France

10.00 Coselection of plasmid-mediated virulence and resistance traits in extraintestinal pathogenic *Escherichia coli*

Nolan L, Logue CM, Li G
College of Veterinary Medicine, Iowa State University, Ames, USA

10.20-10.40 Coffee Break

10.40-11.10 Invited Lecture VI

Alternatives for antibiotics
Rob Lavigne
Leuven, Belgium

11.10-12.30 Oral session X

11.10 Why is ZnO not an alternative to antibiotics in treatment of diarrhoea in piglets?

Vandaele B
UPV, Belgium

11.30 Copper as an alternative to antibiotics in swine production: Impacts on antimicrobial resistance in fecal *Escherichia coli*

Agga GE 1, Scott HM 1, Nagaraja TG 1, Vinasco J 1, Amachawadi RG 1, Bai J 1, Norby B 2, Renter DG 1, Dritz S 1, Nelssen J 3, Tokach M 3
1 Diagnostic Medicine and Pathobiology, Kansas State University, Manhattan, USA; 2 Department of Animal Sciences, Kansas State University, Manhattan, Kansas, USA; 3 Department of Large Animal Clinical Sciences, Michigan State University, East Lansing, Michigan, USA

11.50

Feed size and texture influence propionic and butyric acid concentrations and bacterial community compositions in the pig gastrointestinal tract

Longpré J 1, LeBel P 1, Massé D 2, Fravalo P 1, Fairbrother JM 3, Letellier A 1
1 NSERC Industrial Chair in Meat Safety, Faculty of veterinary medicine, Université de Montréal, Saint-Hyacinthe, Canada; 2 Dairy and Swine Research and Development Center, Agriculture and Agri-Food Canada, Sherbrooke, Canada; 3 Escherichia coli Laboratory, Faculty of veterinary medicine, Université de Montréal, Saint-Hyacinthe, Canada

12.10

Novel antibiotics drug-delivery strategy by utilizing lysozyme as targeting molecule

Ibrahim H, Ono H, Kubo T

Department of Biochemistry & Biotechnology, Graduate School of Agricultural Sciences, Kagoshima University, Kagoshima, Japan