4th International Symposium on Parasite Infections in Poultry

28th – 29th June 2019

to be held at:

University of Veterinary Medicine
Veterinärplatz 1
1210-Vienna, Austria
(http://www.vetmeduni.ac.at/International-Symposium-Parasite-Infections-Poultry-2016/)
Program: 4th International Symposium on Parasite Infections in Poultry

Friday 28th of June

8.00
Registration

9.00
Welcome and opening
(O. Doblhoff, F.M. Tomley and M. Hess)

9.15 - 09.50 Keynote I

Progress towards vaccination against poultry red mite (*Dermanyssus gallinae*)
Nunn, F. a, Bartley, K. a, Küster, T. b, Price, D. a, Burgess, S. a, Øines, Ø. c, Blake D.P. b, Tomley, F. b and Nisbet, A. a.
(Moredun Research Institute, Penicuik, UK; bPathology and Pathogen Biology, Royal Veterinary College, North Mymms, UK; cNorwegian Veterinary Institute, Oslo, Norway)

09.50 - 10.02 Short Oral Poster Presentations

Combination of a new experimental approach and a mathematical model for a more realistic description of population dynamics of *Dermanyssus gallinae*
Roy, L. a, Zriki, G. a, Blatrix, R. a, Gimenez, O. a, Dijoux, J. a, Dadu, L. a, Soulié, A.S. a, Chiron, G. b, Sleeckx, N. c and Bicout, D.J. d
(CEFE, University Paul Valéry Montpellier 3, CNRS, EPHE, IRD, Montpellier, France; bTechnical Poultry Institute, Lyon, France; aExperimental Poultry Centre, Geel, Belgium; Biomathematics and Epidemiology EPSP, TIMC Laboratory, UMR CNRS 5525 Grenoble Alpes University, VetAgro Sup, Marcy l'Etoile, France)

Current situation of *Dermanyssus gallinae* and control methods in Ankara, Turkey
Koc, N. and Nalbantoglu, A.S.
(Faculty of Veterinary Medicine, Department of Parasitology, Ankara University, Turkey)

Transcriptome analysis in blood-fed and starved poultry red mites, *Dermanyssus gallinae*
Fujisawa, S. a, Murata, S. a, Takehara, M. a, Isezaki, M. a, Ogawa, R. c, Uno, Y. c, Taneno, A. c, Okagawa, T. b, Maekawa, N. b, Konnai, S. a, and Ohashi, K. a
(University of Disease Control and bDepartment of Advanced Pharmaceutics, Faculty of Veterinary Medicine, Hokkaido University, Japan; cVaxxinova Japan K.K., Japan)

Mapping the genetic diversity of *Dermanyssus gallinae* onto a European framework utilising the cytochrome c oxidase subunit I (COI) gene
Karp-Tatham, E. a, Kuester, T. b, Angelou, A. c, Papadopoulos, E. c, Nisbet, A.J. d, Xia, D. a, Tomley, F. a and Blake, D.P. a
(University of Veterinary College, Hatfield, UK; bUniversity of Bern, Switzerland; cLaboratory of Parasitology and Parasitic Diseases, School of Veterinary Medicine, Aristotle University of Thessaloniki, Greece; dVaccines, Moredun Research Institute, Penicuik, UK)

10.02 - 10.45 Coffee Break and Poster Session
10.45 - 11.45 Red mite Session I

An example of national control Dermanyssus gallinae
Pavličević, A., Ratajac, R., Stojanov, I. and Pavlović, I.(
("AVES MIT" LLC, Cluster "Dermanyssus gallinae", Subotica-Bajmok, Serbia; "Scientific Veterinary Institute „Novi Sad”, Novi Sad, Serbia; "Scientific Veterinary Institute of Serbia, Belgrade, Serbia)

Assessing biological control of Dermanyssus gallinae by single and multiple predatory mite species via individual- and population-level experiments
("CEFE, University Paul Valéry Montpellier 3, CNRS, University Montpellier, EPHE, IRD, Montpellier, France; Technical Poultry Institute, Lyon, France; Experimental Poultry Centre, Geel, Belgium)

Cysteine protease and ferritin 2 as vaccine antigens to control poultry red mites, Dermanyssus gallinae
("Department of Disease Control, Department of Advanced Pharmaceutics, and Department of Basic Veterinary Sciences, Faculty of Veterinary Medicine, Hokkaido University, Japan; Vaxxinova Japan K.K., Japan; Hokkaido Institute of Public Health, Japan)

11.45 – 13.00 Lunch

13.00 - 14.00 Red mite Session II

The poultry red mite Dermanyssus gallinae: a certified vector of fowl typhoid
Cocciolo, G., Circela, E., Pugliese, N., Felice, V., Mescolini, G., Zoller, H. and Borchert-Stuhlträger, M.(
("Department of Veterinary Medicine, University of Bari Aldo Moro, Italy; Department of Veterinary Medical Sciences, University of Bologna, Italy; MSD Animal Health Innovation GmbH, Germany)

Fipronil in Dutch laying hens: working towards solutions
Ter Veen, C., Van Eerden, E., Swart, W.A., Wiegel, J., Kense, M., Bouwstra, R. and Counotte, G.H.M.(
("GD Animal Health, Deventer, The Netherlands; Schothorst Feed Research, Lelystad, The Netherlands)

Effect of fluralaner on behavioural and stress indicators in laying hens infested with Dermanyssus gallinae
Thomas, E., Temple, D. and Petersen, I.(
("MSD Animal Health Innovation GmbH, Schwabenheim, Germany; School of Veterinary Medicine, Universitat Autonoma de Barcelona, Bellaterra, Spain)
14.00 - 14.35  Keynote II

Vaccine development for coccidiosis: pricing, efficacy and productivity in intensive broiler systems
Gilbert, W. a, Bellet, C. a, Tomley, F.M. b, Blake, D.P. b, and Rushton, J. a
( aUniversity of Liverpool, UK; bRoyal Veterinary College, UK)

14.35 - 14.41  Short Oral Poster Presentations

Local changes in the intestinal mucosa after vaccination against Eimeria
Brylina, M.
(Veterinary Parasitology Department, Moscow State Veterinary Academy named after K.I. Skrjabin, Russia)

Apple cider vinegar and green tea are not effective against a mixed challenge of chickens with Eimeria spp. but influence the intestinal microbiota after challenge with Eimeria spp.
Hauck, R. a,b, Hamilton, M. a,b , Wang, X. b, McCrea, B.A. c, Carrisosa, M. a and Macklin, K.S. a
( aDepartment of Poultry Science, College of Agriculture and bDepartment of Pathobiology, College of Veterinary Medicine, Auburn University, USA; cAlabama Cooperative Extension System, Auburn, USA)

14.41 - 15.20  Coffee Break

15.20 - 17.00  Eimeria Session

The value of Elanco’s Health Tracking System in broiler production
Reinhoudt, D.
(Elanco Animal Health, Utrecht, The Netherlands)

Transmission of resident and challenge Eimeria strains between pens in broiler experiments
Velkers, F.C. a, Kers, J.G. a, Spaninks, M. a, Ter Veen, C. b, Smidt, H. c and Stegeman J.A. a
( aDepartment of Farm Animal Health, Faculty of Veterinary Medicine, Utrecht University, the Netherlands; bGD Animal Health, Deventer, The Netherlands; cLaboratory of Microbiology, Wageningen University & Research, Wageningen, The Netherlands)

Eimeria populations and interactions with the enteric microbiota
Blake, D.P. a, Macdonald S. a, Hinsu, A.T. b, Koringa, P.G. b, Thakkar, J.R. b, Jakhesara, S.J. b, Nolan, M.J. a, Psifidi, A. a, Tomley, F.M. a, Stabler, R.A. c, Rank, D.N. b, Raman, M. d and Joshi, C.G. b
( aPathobiology and Population Sciences, The Royal Veterinary College, Hatfield, Hertfordshire, UK; bCollege of Veterinary Science and Animal Husbandry, Anand Agricultural University, India; cLondon School of Hygiene and Tropical Medicine, London, UK; dTranslational Research Platform for Veterinary Biologicals, Tamil Nadu Veterinary and Animal Sciences University, India)
Experimental clues on oocyst micropyle changes of *Eimeria acervulina* suggesting a fertilization step at oocyst level
Reperant, J.-M., Thomas-Henaff, M., Benoit, C., Le Bihannic, P. and Grasland, B.
(Anses (French Agency for Food, Environmental and Occupational Health and Safety), Laboratory of Ploufragan-Plouzané-Niort, Zoopôle, Ploufragan, France)

Quantitative analysis of poultry macrophage phagocytosis during co-infection by the apicomplexan parasites *Toxoplasma gondii* and *Eimeria tenella*
Zhang, R.a, Daugschies, A.a, Bangoura B.b
("Institute of Parasitology, Leipzig University, Leipzig, Germany; bDepartment of Veterinary Sciences, University of Wyoming, Laramie, USA")

19.30   Symposium Dinner at the Haus der Musik (Sound Museum)
(www.hausdermusik.com)

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### Saturday 29th of June

**09.00 - 09.35** Keynote III

**Current Status of Blackhead Disease (Histomoniasis) in U.S. Poultry**
Clark, S.a and Wakeman, W.b
("Devenish Nutrition, LLC, Fairmont, Minnesota, USA; bAnpario Plc, Worksop, UK")

**09.35 – 10.35** Histomonas Session I

**Evolution of blackhead outbreaks in France**
Turblin, V.a and Pinson, M.b
("MC VET Conseil, Réseau Cristal, Sablé-sur-Sarthe, France; bLABOVET Conseil, Réseau Cristal, Les Herbiens, France")

**Blackhead Disease in Germany: problems and possibilities in turkey husbandry from the perspective of poultry veterinarians**
Casteel E.
(RWS Agrarveredelung, Cloppenburg, Germany)

**Histomonas meleagridis infections in chickens, the situation in Belgium**
Van Limbergen, T.
(PEHESTAT bvba, Belgium)
Encapsulated organic acids are effective at controlling *Histomonas* growth *in vitro*

Wealleans, A.L.\(^a\), Pollock, K.V.\(^b\), Chadwick, E.\(^c\), Beckstead, R.\(^c\) and Thijs, L.\(^a\)

\(^a\)Kemin, Europa NV, Herentals Belgium; \(^b\)Kemin Industries, Des Moines, USA; \(^c\)North Carolina State University, Raleigh, USA

*Histomonas meleagridis*-specific T-cell response in chickens and turkeys

Lagler, L.\(^a\), Schmid, S.\(^a\), Mitra, T.\(^b\), Pierron, A.\(^a\), Vatzia, E.\(^a\), Milburn, J.\(^a\), van Dongen, K.\(^a\), Stas, M.\(^c\), Villanueva-Hernandez, S.\(^a\), Stadler, M.\(^a\), Wernsdorf, P.\(^b\), Hatfaludi, T.\(^b\), Liebhart, D.\(^3\) and Gerner, W.\(^a\)

\(^a\)Institute of Immunology, University of Veterinary Medicine, Vienna, Austria; \(^b\)Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria; \(^c\)Clinic for Swine, University of Veterinary Medicine, Vienna, Austria

The impact of attenuated and virulent *Histomonas* on the innate immune response of chickens and turkeys

Mitra, T.\(^a\), Bramberger, B.\(^a\), Hess, M.\(^a\)\(^b\) and Liebhart, D.\(^a\)

\(^a\)Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria; \(^b\)Christian Doppler Laboratory for Innovative Poultry Vaccines (IPOV), Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria

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**10.41 - 11.20 Coffee Break and Poster Session**

**11.20 - 12.20 Histomonas Session II**

Full genome sequence of virulent and *in vitro* attenuated *Histomonas meleagridis*

Bilic, I.\(^a\), Palmieri, N.\(^a\), Jaskulska, B.\(^a\) and Hess, M.\(^a\)\(^b\)

\(^a\)Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria; \(^b\)Christian Doppler Laboratory for Innovative Poultry Vaccines (IPOV), Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria

Combating *Histomonas meleagridis* using novel antimicrobial peptides derived from microbiomes

Pickup, J., Oyama, L., Nixey, C. and Huws, S.

(Queens University Belfast, UK)

*Histomonas meleagridis* favors the caecal colonization of *Escherichia coli* in chickens determined experimentally

Paudel, S.\(^a\), Hamid, M.\(^a\), Hatfaludi, T.\(^a\), Rezaee, M.\(^a\), Liebhart, D.\(^a\), Hess, C.\(^a\) and Hess, M.\(^a\)\(^b\)

\(^a\)Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria; \(^b\)Christian Doppler Laboratory for Innovative Poultry Vaccines (IPOV), Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria

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**12.20 – 13.30 Lunch**
Program: 4th International Symposium on Parasite Infections in Poultry

13.30 - 14.05 Keynote IV

Present and future trends of coccidiosis control in turkeys
Dehaeck, B., De Gussem, K., Marien, M. and Vereecken, M.
(Huvepharma NV, Antwerp, Belgium)

14.05 - 14.40 Keynote V

New insights into host-parasite interactions in a chicken-nematode system
Das, G.
(Institute of Nutritional Physiology ‘Oskar Kellner’, Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany)

14.40 - 15.40 Nematode Session

Control of *Capillaria* infestation with fenbendazole in chickens via drinking water treatment in combination with zero-day egg withdrawal
Koopman, R.
(MSD Animal Health, Boxmeer, Netherlands)

Prevalence of parasites in backyard chicken flocks in Alabama, USA
Carrisosa, M.a, McCrea, B.A.c, Macklin, K.S.a, Dormitorio, T.a and Hauck, R.a,b
(‘Department of Poultry Science, College of Agriculture and 2Department of Pathobiology, College of Veterinary Medicine, Auburn University, USA; 3Alabama Cooperative Extension System, Auburn, USA)

Prevalence of intestinal helminthes in layers kept in alternative husbandry system: influence of housing and age of birds
Zloch, A.a, Kuchling, S.b, Hess, M.a and Hess C.a
(‘Clinic for Poultry and Fish Medicine, Department for Farm Animals and Veterinary Public Health, University of Veterinary Medicine Vienna, Austria, 2Austrian Agency for Health and Food Safety (AGES), Division for Data, Statistics and Risk Assessment, Graz, Austria)

15:40 Concluding Remarks

15.45 End of the Symposium
Additional Posters

**Red Mite**

Consequences of a low infestation by *Dermanyssus gallinae* on layer hen performance  
Cariou, N. and Daluzeau, L.  
*(MSD Animal Health, Beaucouzé, France)*

**MITECONTROL: Developing Integrated Pest Management (IPM) strategies to control poultry red mite infestations in laying houses**  
Decru, E.a, Chiron, G.b, Norton T.c, Roy, L.d, Vargas Navarro, A.e, Walton, J.f, & Sleeckx, N.a  
(aExperimental Poultry Centre, Geel, Belgium; bTechnical Poultry Institute, Paris, France; cResearch and Development, University of Leuven, Belgium; dCEFE CNRS, University Montpellier, France; eKoppert Biological Systems, Berkel & Rodenrijs, The Netherlands; fRSK ADAS, Bristol, UK)

Improving PRM control by implementation of IPM in practice with the Intereg NWE MiteControl project  
Decru, E.a, Chiron, G.b, Norton T.c, Roy, L.d, Vargas Navarro, A.e, Walton, J.f, & Sleeckx, N.a  
(aExperimental Poultry Centre, Geel, Belgium; bTechnical Poultry Institute, Paris, France; cResearch and Development, University of Leuven, Belgium; dCEFE CNRS, University Montpellier, France; eKoppert Biological Systems, Berkel & Rodenrijs, The Netherlands; fRSK ADAS, Bristol, UK)

Enhancing efficiency and sustainability at controlling poultry red mites in laying hens  
De Herdt, P., Van Hoye, K. and Van Gorp, S.  
*(MSD Animal Health, Brussels, Belgium)*

The prevalence of *Dermanyssus gallinae* (Poultry Red Mite) on poultry farms in The Netherlands, based on monitoring data with AviVet® Red Mite traps  
Lammers, G.A.a, Bavinck V.a and van Dijk-Pecher F.b  
(aAviVet BV, Lunteren, The Netherlands; bMSD Animal Health, Boxmeer, The Netherlands)

The possible side-effect of two different drinking water additives on the control of *Dermanyssus gallinae*  
Mul, M.F., Binnendijk, G.P., van Riel, J.W. and van Wikselaar, P.G.  
(Wageningen Live Stock Research, University Wageningen, The Netherlands)

A case of red mite infestation in a laying hen farm, treated with fluralaner Exzolt® and followed by hematological and biochemical analysis  
Sauvaget, S. and Mauvisseau, T.  
*(Labovet Conseil, Les Essarts, France)*

**Eimeria and Coccidiosis**

A multi-omic approach to improve annotation of the *Eimeria tenella* genome  
Attree, E.a, Gundogdu, O.b, Blake, D.a, Tomley, F.a and Xia, D.a  
(aPathobiology and Population Sciences, The Royal Veterinary College, Hatfield, UK; bFaculty of Infectious & Tropical Diseases, London School of Hygiene & Tropical Medicine, London, UK)

Cytokine expression in poultry heterophils during in-vitro confrontation with *Eimeria tenella* sporozoites  
Rentería-Solís, Z.  
*(Institute for Parasitology, Faculty of Veterinary Medicine, University of Leipzig, Leipzig, Germany)*
**Histomonas meleagrisis and blackhead**

Surveillance of histomonosis in Austrian turkey flocks following numerous fatal outbreaks
Liebhart, D.\(^a\), Sulejmanovic, T.\(^a\), Bilic, I.\(^a\), Eigner, M.\(^b\), Schliessnig, H.\(^b\) and Hess, M.\(^a\)
\(^a\)Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria; \(^b\)Austrian Poultry Health Service

In silico comparison of metabolic pathways between *Histomonas meleagridis* and closely related parasitic parabasalids with different hosts.
Palmieri, N., Bilic, I. and Hess, M.
(Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria)

Identification of *Histomonas meleagridis* surface proteins
Ramires, M., Hess, M. and Bilic, I.
(Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria)

PCR and serology confirm the infection of turkey hens and their resilience to histomonosis in mixed flocks following high mortalities in toms
Sulejmanovic, T., Grafl, B., Bilic, I., Jaskulska, B. and Hess, M.
(Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria)

Excretion of *Histomonas meleagridis* following experimental co-infection of different genotypes of commercial chickens with *Heterakis gallinarum* and *Ascaridia galli*
Wachter, L.\(^a\), Daş, G.\(^b\), Bilic, I.\(^a\), Grafl\(^1\), B., Hess, M.\(^a,\(^c\) and Liebhart, D.\(^a\)
\(^a\)Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria; \(^b\)Institute of Nutritional Physiology ‘Oskar Kellner’, Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany; \(^c\)Christian Doppler Laboratory for Innovative Poultry Vaccines (IPOV), Clinic for Poultry and Fish Medicine, University of Veterinary Medicine, Vienna, Austria

**Nematodes**

Response of a dual-purpose chicken genotype to mixed-nematode infections as compared with those of broiler and layer type chickens
Das, G., Stehr, M. and Metges, C.C.
(Institute of Nutritional Physiology ‘Oskar Kellner’, Leibniz Institute for Farm Animal Biology, Dummerstorf, Germany)
Sponsors

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