



Activity report 2010

Department of infectious and parasitic diseases

Activity report 2010

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Teaching activities in 2010

2nd year Bachelor's degree in Veterinary Medicine

- > Initiation to Veterinary Public Health, A. Clinquart, G. Daube, C. Saegerman, J. Detilleux, CT 12h - 1 ECTS.

3rd year Bachelor's degree in Veterinary Medicine

- > General Bacteriology, J. Mainil, CT 23h + TP 10h + TD 2h - 4 ECTS.
- > Veterinary Immunology, A. Vanderplasschen, CT 33h + TP 8h - 4 ECTS.
- > General Virology applied to Veterinary Sciences, E. Thiry, CT 14h + TP 8h - 2,5 ECTS.
- > Veterinary Epidemiology and Risk Analysis, Parts I and II, C. Saegerman, CT 13h + TD 4h - 2 ECTS.
- > Veterinary Parasitology, B. Losson, B. Mignon, CT 23h + TP 7h - 3 ECTS.

1st Master degree in Veterinary Medicine

- > Parasitology applied to Veterinary Medicine, including Mycology and tropical Parasitology, B. Losson, CT 25h + TP 7h - 3,5 ECTS.
- > Pathology of animal bacterial diseases, J. Mainil, A. Linden, CT 36h - 3,5 ECTS.
- > Biosecurity, good veterinary practices and factual medicine, C. Saegerman, C. Bouvy, J.-M. Vandeweerd, CT 1h + TD 30h - 5 ECTS.

2nd Master degree in Veterinary Medicine

- > Pathology of animal bacterial diseases, A. Linden, J. Mainil, CT 35h TP 12,5h - 3,5 ECTS.
- > Animal Epidemiology, C. Saegerman, CT 10h - 1 ECTS.
- > Pathology of animal parasitic diseases, B. Losson, B. Mignon, CT 40h + 5h + 5h + 5h + TP 14h + PC 12,5h - 5 ECTS.
- > Pathology of animal viral diseases, E. Thiry, CT 30h + 5h + 5h + 5h + PC 12,5h - 8,5 ECTS.
- > General Vaccinology and applied to Veterinary Medicine, general Immunopathology, A. Vanderplasschen, CT 15h + PC 4h - 1 ECTS.
- > Graduation work Part I. Collective (responsible J. Mainil) - 2 ECTS.

3rd Master degree in Veterinary Medicine

- > Legal dispositions in the control of transmissible diseases, C. Saegerman, 5h - 1 ECTS.
- > Law and Veterinary Medicine, P. Moreau (Fac. Droit), C. Saegerman, 13,5h - 1 ECTS.
- > Paraclinics of infectious and parasitic diseases in domestic animals, A. Linden (coordination), B. Losson, J. Mainil, B. Mignon, E. Thiry, C. Saegerman et A. Vanderplasschen, 52,5h - 2 ECTS.
- > Graduation work Part II. Collective (responsible J. Mainil) - 13 ECTS.



Teaching activities in 2010

Advanced Master in Sciences

- > Parasitology, B. Mignon, CT 15h + TP 15h.
- > Flow cytometry and confocal microscopy, L. Gillet, B. Dewals, A. Vanderplasschen, CT 15h.

Complementary Master in specialized Veterinary Medicine

- > Complements in Epidemiology, C. Saegerman, CT 15h.
- > Principles, concepts and methods of Risk Analysis related to animal food products, C. Saegerman, G. Daube, M.-L. Scippo, CT 5h + TD 10h.

Complementary Master in Biotechnology and applied Biology

- > General Vaccinology and applied to Veterinary Medicine, general Immunopathology, A. Vanderplasschen, CT 15h - 2 ECTS.

Advanced Master in Sciences of animal food products

- > Complements in Epidemiology, C. Saegerman, CT 15h.
- > Risk Assessment applied to the food chain, C. Saegerman, G. Daube, G. Maghuin-Rogister, CT 15h.

Advanced Master in experimental Veterinary Medicine

- > Bacterial Genetics, J. Mainil, CT 15h.
- > Virulence and bacterial resistances, J. Mainil, CT 15h.
- > Molecular Virology, E. Thiry, CT 15h.
- > Complements in Epidemiology applied to Veterinary Sciences, C. Saegerman, CT 15h.
- > Recent developments in Immunology, A. Vanderplasschen, CT 20h.
- > Recent developments in Vaccinology, A. Vanderplasschen, CT 15h.
- > Molecular Parasitology, B. Losson, CT 10h.
- > Anti-parasitic Immunology, B. Losson, CT 5h.
- > Recent developments in experimental Parasitology, B. Losson, CT 15h.

Complementary Master in Management of animal and vegetal Resources in tropical regions

- > Animal health and reproduction in tropical regions - Bacteriology, A. Linden, CT 42 h, 7h partim.
- > Animal health and reproduction in tropical regions - Parasitology, B. Losson, CT 42h, 7h partim.
- > Epidemiological relationships between domestic and wild animals in tropical regions - A. Linden, CT 14h.



Teaching activities in 2010

PhD Formation

- > Molecular Virology, E. Thiry, CT 15h.
- > Viral vectors of expression, E. Thiry, CT 10h.
- > Presentation of results, E. Thiry, CT 10h.
- > Viral vectors of expression, E. Thiry, CT 15h.
- > Complement of Epidemiology applied to Veterinary Sciences, C. Saegerman, CT 15h.

Continuing Education in Science of laboratory animals

- > Bacterial diseases, J. Mainil, CT 2h.
- > Immunology, L. Gillet, CT 2h.
- > Set up of experimental designs, E. Thiry, CT 2h.
- > Parasitology of laboratory animals, B. Mignon, CT 2h.

Continuing Education related to the article 20 of the 31st of March 2004 French-speaking Community degree

- > Cycle of advanced teaching in Infectiology and epidemiology of emerging diseases, B. Losson, E. Thiry, J. Mainil, A. Linden, A. Vanderplasschen, C. Saegerman, CT 217h, TD 76 h, VE 14 h - 31 ECTS.

Teaching in the frame of industrial activities

- > Viral production in industrial environment - GSK, A. Vanderplasschen, 4h.



Research activities in 2010

PhDs and dissertations

PhDs

Baldo A.: Implication of a secreted subtilisin in *Microsporium canis* adherence to feline epidermis.

Promotor B. Mignon.

Public defense: February 24.

Bankolé H.: Bovine brucellosis in the Gambia and Senegal: risk assessment of human infection from raw milk consumption.

Antwerpen University. Co-Promotor C. Saegerman.

Public defense: June 21.

Mauroy A.: Study of the zoonotic risk associated to animal enteric caliciviruses by analysis of sequences detected in the porcine and bovine species, and of the interactions between bovine noroviruses and cells.

Promotor E. Thiry.

Public defense: June 21.

Michel B.: Structural proteome of cyprinid herpesvirus 3.

Promotor A. Vanderplasschen.

Public defense: July 5.

Barrandeguy M.: Virological aspects and pathogenesis of natural and experimental equid herpesvirus 3 infection in horses.

Promotor E. Thiry.

Public defense: September 14.

Praet N.: The epidemiology of *Taenia solium*: towards the burden of porcine and human cysticercosis.

Promotor C. Saegerman.

Public defense: October 14.



Research activities in 2010

PhDs and dissertations

Dissertations of Doctoral training

Martinelle L.: Study of the pathogeny, protection mechanisms and virus persistence of bluetongue virus in cattle.

Promotor C. Saegerman.

Public defense: June 8.

Issa Ibrahim A.: Bacterial species associated to mammites in the Zebu Azawak race in the Toukounous Experimental Station (Niger) - Phenotypical and genetical characterization of the Staphylococcus.

Promotor J. Mainil.

Public defense: September 2.



Research activities in 2010

Current research projects

BACTERIOLOGY

Member of the European Excellence Network EADGENE (FOOD-CT-2004-506416): "Genomics of Host-Pathogen interactions in farm animals". Co-leader of the working group *Escherichia coli* du workpackage WP07.1 (Functional genomics). 2004-2010.

Member of the walloon network AUREA (coordinated by Prof. Moreno Galleni) Walloon Region convention # 415897: "Vaccinal prevention of *Staphylococcus aureus* bovine mastitis". 2005-2010.

Promotor of the Public Health Ministry convention #6172: "Identification of host-specific virulence factors of bovine and human enterohemorrhagic *Escherichia coli* (EHEC) strains belonging to serogroup O26 by DNA subtracting hybridation". 2006-2010.

Member of the European Coordinated Action PEN (FOOD-CT2006-036256): "Pathogenic *Escherichia coli* network". 2007-2009.

National Funds for Scientific Research (FNRS) credits - Credit for researcher: "Identification of genes coding for characteristics involved in the pathogeny and/or host-specificity of bovine and human enterohemorrhagic *Escherichia coli* (EHEC) DNA subtracting hybridation and by transcriptomics". 2007-2010.

Credits form the ULg Research Council: "Identification and comparison of plasmidic mechanisms of resistance to fluoroquinolones of commensal and pathogenic human and animal *Escherichia coli* strains". 2008-2011.

National Funds for Scientific Research (FNRS) credits - Credit for researcher: "Interaction of non-0157 Tir Alpha or Tir Beta enterohemorrhagic *Escherichia coli* (EHEC) strains isolated from calves and man with bovine cells immortalized in culture". 2008-2011.

Walloon Region agreement DGARNE # E'2009-137: "Intra-cellular survival of *Staphylococcus aureus* strains isolated from bovine mastitis: comparison of virulotypes and transposition in mice". Promotor J. Mainil, co-promotor F. Bureau. 2009-2011.



Research activities in 2010

Current research projects

EPIDEMIOLOGY & RISK ANALYSIS

Research agreement of the Public Federal Service (PFS), Public Health, Safety of the Food Chain and Environment n° RT-10/10, entitled: Study of the emerging strains of the bluetongue virus in order to better understand the epidemiological evolution of the disease and to adapt the fight plans in consequence. Promotor : C. Saegerman. 2010-2013.

Research agreement of the Public Federal Service (PFS), Public Health, Safety of the Food Chain and Environment n° RT-10/04, entitled: Study of the prevalence of the head meal and bovine carcasses contamination by central nervous system tissues in the belgian abattoirs and cutting rooms. Promotor : C. Saegerman. 2010-2011.

Public market of the Federal Agency for the Safety of the Food Chain (FASFC), entitled: Study of the slaughter and meal cutting processes in Belgium in the context of risks of contamination of the head meal and bovine carcasses contamination by central nervous system tissues. Promotor : C. Saegerman. 2010-2011.

Research agreement of the Walloon Region D31-1225, entitled: Development of a generic tool of quantification of the direct and indirect economical losses suffered by farmers and civil society in the context of the emerging diseases in the Walloon Region (Wal-Econo-Tools). Promotor : C. Saegerman. 2009-2011.

Research agreement of the Walloon Region, Development and Popularization Direction, entitled: Implementation of control methods against bluetongue disease vectors in farms. Phase 2: Evaluation of the efficacy of physical, hygienic and biocidal in stables methods. Co-Promotor : C. Saegerman. 2010-2011.

Credit allowed by the ULg Research Council FSRC-10/27, entitled: Study of the crossed protection mechanisms and the potential genetic reassortments between serotypes of the bluetongue virus. Promotor : C. Saegerman. 2010.

Research agreement of the FRFC 2.4611.11, entitled: Study of the evolution of orbiviruses populations by reassortment and recombination by the bluetongue virus infection in the insects and natural mammals hosts and in a sensitive murine model. Promotor : C. Saegerman. 2010-2013.

Research agreement of the Public Federal Service (PFS), Public Health, Safety of the Food Chain and Environment n° RF-07/48, entitled: Study of protective and persisting mechanisms of bluetongue virus in cattle (EPI-EMERGE project). Promotor : C. Saegerman. 2008-2010.



Research activities in 2010

Current research projects

WILDLIFE

Outline-Agreement of the Walloon Region (A.B. 43.01). Network of wildlife sanitary surveillance. 2005-...

FASFC Agreement (PCCB/S2/PH). Active monitoring of avian influenza in wild birds. 2005-...

Walloon Region Agreement (DNF/DCP/CD601). CWD study relative to the European Commission decision 2007/182/CE. 2007-2010.

Walloon Region Agreement. Monitoring of classical swine fever and Aujeszky disease in wild boar in Wallonia. 2010.

Research funds of the Belgian Agency of Development. Anaplasma phagocytophilum prevalence in wild ruminants in Wallonia. 2008-2012.



Research activities in 2010

Current research projects

IMMUNOLOGY-VACCIINOLOGY

Several University of Liège credits: (i) 2 Post-Doctoral in (2006-2009, 2009-2010), (ii) impulsion credit (2006-2009), research credits (3).

Numerous FNRS (Aspiring, Research Manager), FRIA et FRFC conventions. 2006-2012.

Agreement FRFC 2.4654.07. Study of the role of myxomatosis virus MST3N gene in the biology of infection *in vitro* and *in vivo*. 2007-2010.

Agreement FNRS-SRI (Research and Innovation Service) 07/17. Fundamental and applied study of cyprinide herpesvirus 3. 2007-2010.

Walloon Region, "Marshall" Excellence program. DIANE : Inflammatory disorders in neurological affections. 2008-2013.

ARC. Glycans as key players in host-virus interactions. 2008-2013.

Agreement FRFC 2.4623.09. Acquisition of a community IVIS platform. 2009.

Agreement FSRC 09/76. Study of the herpesvirus 3 ORF16 gene and of the roles of its expression product in the biology of infection *in vitro* et *in vivo*. 2009-2011.

Agreement SFRD 09/11 (Promotor L. Gillet). Study of the transmission of a gammaherpesvirus in its natural host and development of original vaccination strategies. 2009-2011.

Agreement MIS F.4510.10. Study of the gammaherpesvirus neutralization escape, development of original vaccination strategies. 2009-2011.

Agreements with 3 private companies active in the field of veterinary vaccinology and antiviral therapy. These conventions are covered by MTA and MDCA.



Research activities in 2010

Current research projects

PARASITOLOGY

SSTC Contract n° SD/BD/02A. Partner of the network project: Towards a sustainable management of pond diversity at the landscape level. 2006-2010.

Agreement FASFC-ULg, ITG, Gembloux Agro-Bio Tech. Entomological survey of sheep bluetongue in Belgium. 2007-2010.

Agreement n° 516170. Mycocure - First Spin-off project. Elaboration of a biological acaricid to fight cattle psoroptic mange. 2008-2010.

Agreement FRSM 3.4535.08. Implication of the *Microsporium canis* proteases in the fungal adherence/invasion and in the implementation of the cutaneous immune response. Promotor: B. Mignon. 2008-2010.

Agreement FRSM 3.4558.10. *Microsporium canis*: identification of the proteases involved in the first steps of the infectious process and identification of the secretion products able to induce a protective immune response. Promotor: B. Mignon. 2010-2013.

Agreement FIRST Spin-Off with the Walloon Public Service (DSPEED). Development of a rapid diagnosis method for the *Microsporium canis* dermatophytosis. Promotor: B. Mignon. 2009-2011.



Research activities in 2010

Current research projects

PARASITOLOGY

Agreement with the Walloon Region 2967. Implementation of control methods against bluetongue disease vectors in farms. Phase 2. 2010-2011.

Agreement with the Walloon Region 2970. Reasoned management of parasitism in young dairy cattle. 2009-2010.

Agreement with the Walloon Region - DODDE project. Development of diagnosis tools and councils to improve durability in breeding. 2009-2011.

Belgian Technical Cooperation. CTB scholar Moïse Kalumé Kasereka (RDC - Butembo). Epidemiological study on tick vector diseases in the Butembo Region, and more particularly *Theileria parva* theileriosis. 2008-2012.



Research activities in 2010

Current research projects

VIROLOGY

Agreement PFS, programmation of Science Policy. Science for a sustainable development. (coordinator, in collaboration with M. Uyttendaele, L. Herman, G. Daube, K. Dierick). Routes of transmission of noroviruses, emerging human pathogens present in the food chain (NORISK). 2007-2011.

Agreement, scientific cooperation agreement FRS-FNRS - Conicet (Argentine) Neuropathogenesis of alphaherpesvirus infections. 2007-2008.

Agreement Funds for Collective Fundamental Research (FRFC) n° 2.4571.08 (in co-direction with J. Mainil et D. Desmecht). Study of infectious emerging diseases. Level 3 (L3) Biosecurity platform. 2007-2008.

PFS Public Health, Safety of the Food Chain and Environment, Convention n° RF-07/48 (in co-direction with C. Saegerman). Study of protective and persisting mechanisms of bluetongue virus in cattle (Acronym: first EPI-EMERGE project). 2008-2010.

Agreement of the Walloon Region, "Réseaux" program (in collaboration with J.-M. Frère, R. Jérôme, P. Bertrand), Sensotem. Development of a biosensor for the diagnosis of the viral diseases. 2009-2010.

Agreement PFS, programmation of Science Policy. Cluster project SD/CL/09. Science for a durable development (coordinator, in collaboration with C. Zwetkoff, S. Brunet, M. Coosemans). Risk of emergence of viral diseases driven by eco-climatic changes and socio-economical situations.

Agreement of the Walloon Region, First entreprise 6224 (coordinator: T. Leclipteux, Coris-BioConcept). Identification and use of genetic sequences for detection of calicivirus. 2010-2012.

PFS Public Health, Safety of the Food Chain and Environment RT-10/07 "INDEVIREQ" (in co-direction with F. Francis and B. Caij). Study of conditions of introduction and detection of the AHS virus and american equine encephalitis viruses (East, West and Venezuela). 2010-2012.



Services to the Society

Several technological platforms (e.g., confocal microscopy, flow cytometry, *in vivo* imaging).

Several scientific committees in Belgium and abroad.

FELASA patent

European patent concerning "Bovine herpesvirus vaccine",
Dr M. Thirion, Prof. A. Vanderplasschen.

Prof. B. Losson's participation (examination committee member) at the European Veterinary Parasitology College (E.V.P.C.) examination in the Faculty of Veterinary Medicine, University of Zagreb (Croatia) on November 26th and 27th, 2010.

Dr B. Mignon's participation to the campaign against dog excrement organized by the city of Liège.



Hats off !

Seniors

Price of the ordinary contest of the sixth Section (2009-2010) of the Royal Medicine Academy of Belgium, for a work answering to the question "It needs researches on bluetongue virus due to serotype 8 virus"

Prof. Claude Saegerman

Juniors

Janssen Award 2010 for the best scientific presentation (Annual meeting of the BSP - Antwerpen, June 3rd)

Dr Laetitia Lempereur

Formation Thomas Lermusiaux Award 2010. Vegetative endocarditis in the horse: literature review and retrospective study.

Dr Sarah Porter

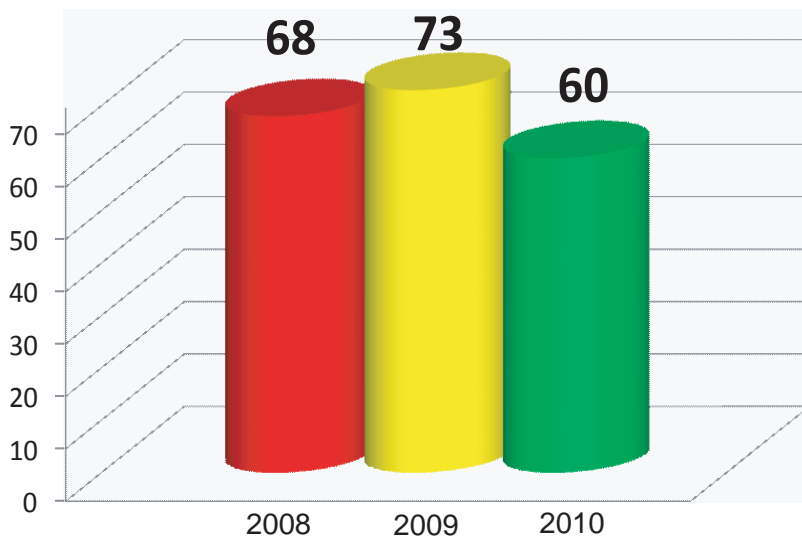


Publications

Link to the "Publications" page of our website:

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Number of publications :

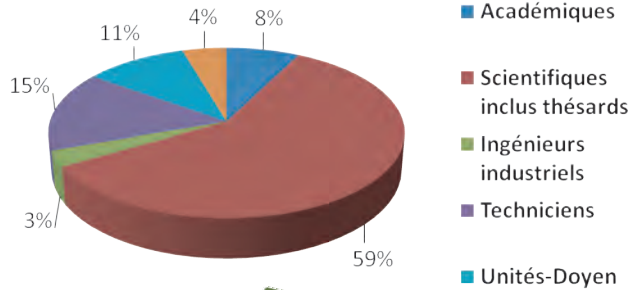




The team



2004
66 membres



2010
79 membres

