

Programme & Abstracts



14th International Conference of the Association of Institutions for Tropical Veterinary Medicine

25 – 29 August 2013

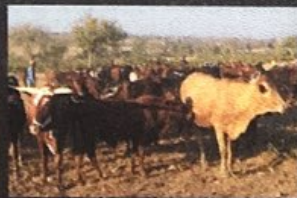
Indaba Hotel and Conference Centre
Johannesburg, South Africa



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA
Faculty of Veterinary Science

Jointly organised by:

Institute of Tropical Medicine
Antwerpen, Belgium



Contents



Plenary presentations	1	A review on bovine tuberculosis at the wildlife/livestock/ human interface in sub-Saharan Africa	8
Understanding epidemiological processes for better control of emerging animal diseases: stakes and challenges for surveillance in Africa	1	<i>Brucella abortus</i> is circulating in both, man and animals of Bangladesh	9
The livestock-human-wildlife interface: Challenges in animal health and production in urban/peri-urban and extensive farming/conservation systems. The road that should be more travelled.....	1	Brucellosis and bovine tuberculosis at an animal-human interface in Zimbabwe	10
Enhancing health systems in Africa through training in One Health	2	Parallel session 2: drivers of emerging and re-emerging diseases (b).....	10
Day 1: Monday 26/08/13	3	Brucellosis in small ruminants – seroprevalence and household practices in peri-urban farming around the capital Dushanbe, Tajikistan.....	10
Parallel session 1: diagnosis, surveillance and control at the interface (a)	3	Zoonoses in humans and domestic animals in Cambodia, a cross disciplinary approach	11
Global elimination of rabies in humans: actions targeted at the animal reservoir	3	Feeding behaviour of <i>Culicoides</i> spp. (Diptera: Ceratopogonidae) on cattle and sheep in northeast Germany.....	12
Knowledge and perceptions of dog ownership and rabies control among the Mnisi community, Mpumalanga, South Africa	3	Current knowledge of cryptosporidium at the wildlife livestock human the interface of the Kruger National Park	12
Portable platforms for the detection of African swine fever virus tested in field conditions in East Africa	4	Day 2: Tuesday 27/08/2013	14
Understanding the dynamics and spread of African swine fever virus - a study on the role of the bushpig, <i>Potamochoerus larvatus</i> , at the wildlife-livestock interface	5	Parallel session 1: diagnosis, surveillance and control at the interface (c)	14
Parallel session 1: diagnosis, surveillance and control at the interface (b)	5	Bovine tuberculosis in the highlands of Cameroon: Risk factors analysis and implications for public health	14
Using participatory epidemiology to prioritize swine diseases at commune level in the Red River Delta region, Vietnam	5	Zoonotic tuberculosis at human-livestock interface in South-East Ethiopia	14
Spatial and seasonal patterns of Foot-and-Mouth Disease outbreaks in domestic cattle in Zimbabwe between 1930 and 2006: a role of the wildlife/livestock interface in FMD emergence in cattle in Zimbabwe?	6	Bovine tuberculosis in the border area of the Natural Park of W in Niger: Impacts and risk factors for the disease transmission in cattle and humans in rural, peri-urban and urban areas	15
Contact rates with buffalo explain foot-and mouth disease dynamics in cattle at the periphery of Transfrontier Conservation Areas in southern Africa	7	Measuring the prevalence and potential economic impact of <i>Mycobacterium bovis</i> and <i>Brucella abortus</i> in community-owned livestock bordering Hluhluwe-iMfolozi Park, South Africa.....	15
Parallel session 2: drivers of emerging and re-emerging diseases (a).....	7	Parasitic Zoonoses in Georgia	16
The prevalence of zoonotic tuberculosis in cattle at the livestock/human interface in the Mnisi community, South Africa	7	Parallel session 1: diagnosis, surveillance and control at the interface (d)	17
The prevalence of Bovine tuberculosis in Swaziland	8	Wildlife and livestock use of extensive farm resources in South Central Spain: implications for disease transmission	17
		Participatory and active surveillance for disease syndromes in communal cattle at the livestock/ wildlife interface, South Africa	17

Feeding behaviour of *Culicoides* spp. (Diptera: Ceratopogonidae) on cattle and sheep in northeast Germany

T Ayllón¹, AM Nijhof¹, W Weiher¹, B Bauer¹, X Allène², P-H Clausen¹

¹Institute for Parasitology and Tropical Veterinary Medicine, Freie Universität Berlin, Königsweg 67, D-14163, Berlin, Germany; ²CIRAD, UMR Contrôle des maladies, F-34398, Montpellier, France; clausen.ph@vetmed.fu-berlin.de

Culicoides spp. play an important role as vectors of several vector-borne pathogens such as bluetongue virus (BTV) and Schmallenberg virus (SV). The unexpected outbreak of bluetongue in Europe in 2006, its fast dissemination and the emergence of Schmallenberg disease in Europe had an enormous impact on livestock production (1,2). Although the importance of autochthonous *Culicoides* species in the dissemination of BTV and SV is generally recognized, many aspects of the ecology of native *Culicoides* species are still not fully understood, and there is a lack of information concerning their dispersal, vectorial capacity, feeding and host-seeking behaviour. In order to better understand the biology of *Culicoides* species in Central Europe, we performed a field study in northeast Germany which aimed to clarify the daily activity patterns, preferential landing and feeding sites and host feeding preferences of *Culicoides* spp. using cattle and sheep as baits.

The study was performed in July 2012 and was divided in three parts (A, B and C). In study A, 3545 *Culicoides* belonging to 13 species were collected from the vicinity of cattle and sheep over a 72h period using drop traps and backpack aspirators. We observed a bimodal pattern of activity, with peaks at dawn and dusk, although the highest midge activity was found around sunset (24% of the catches). By direct aspiration of midges from the body surface of cows and sheep in study B, we aimed to determine the preferential landing and feeding sites of *Culicoides* species. We collected 2024 *Culicoides* from four different body regions, whereby a high number of midges were collected from the lower body regions of cattle and sheep. This has implications for the use of topical (pour-on) insecticides to prevent midge bites, as their availability in the skin of different body regions may not be homogenous (3). Host feeding preferences of *Culicoides* were tested in study C where we collected midges using 2 drop traps placed at an intermediate distance of 10m with a cow or three sheep placed as baits inside. The origin of the host bloodmeal was confirmed by a PCR targeting the cytochrome B gene. In study C, 3710 *Culicoides* were collected, 83% of them from cattle and 17% from sheep. Nearly half (46.7%) of the midges collected from cattle were engorged, significantly more than sheep where 7.4% of the collected midges were engorged, which suggests that cattle are more attractive for *Culicoides* midges in comparison to sheep. All *Culicoides* species collected were morphologically identified, according to standard identification keys. *Culicoides* from the *Obsoletus* complex (*C. obsoletus* and *C. scoticus*) were the most common *Culicoides* species collected, followed by *C. punctatus*. Other species identified were *C. dewulfi*, *C. chiopterus*, *C. pulicaris*, *C. lupicaris*, *C. pallidicornis*, *C. subfascipennis*, *C. achrayi*, *C. griseidorsum*, *C. subfagineus* and *C. stigma*, the last two species described for the first time in Germany. Significantly more engorged *C. chiopterus* midges were collected from sheep in study C, suggesting a potential host preference of this species for sheep.

References

1. Conraths F, Peters M, Beer M 2013 Schmallenberg virus, a novel orthobunyavirus infection in ruminants in Europe: Potential global impact and preventive measures. *New Zealand veterinary journal* 61:63-67
2. Wilson AJ, Mellor PS 2009 Bluetongue in Europe: past, present and future. *Philosophical transactions of the Royal Society of London Series B, Biological sciences* 364(1530):2669-2681
3. Stendel W, Hamel HD, Sieveking HU, Bruhne D 1992 Analytical determination of the distribution of flumethrin on the body surface of cattle following topical pour-on application. *Veterinary parasitology* 1992, 42(1-2):137-143.

Current knowledge of cryptosporidium at the wildlife livestock human the interface of the Kruger National Park

N Abu Samra¹, F Jori², S Caccio³, J Frean⁴, B Poonsamy⁴, P Thompson¹

¹Epidemiology Section, Department of Production Animal Studies, University of Pretoria, Private Bag X04, Onderstepoort 0110, South Africa; ²CIRAD, UR AGIRs, Mammal Research Institute, Department of Zoology and Entomology, University of Pretoria, 0002, South Africa; ³European Union Reference Laboratory for Parasites, Department of Infectious, Parasitic and Immunomediated Diseases, Istituto Superiore di Sanità, Rome, Italy; ⁴National Institute for Communicable Diseases, South African Rotavirus Surveillance Programme, University of the Witwatersrand, Johannesburg, South Africa; nada.nada@gmx.de

Cryptosporidium spp. is an oocyst-forming apicomplexan protozoan, which infects a large number of animals and humans (Putignani and Menichella 2010). Several species/genotypes have a relevant zoonotic potential and ruminants are considered as an important source of infection (Xiao and Feng 2008). In general, young individuals show higher rates of infection compared to adults (Santín et al. 2004). *Cryptosporidium* infection has been demonstrated in a wide number of wild animals, which might contribute to environmental contamination (Feng 2010). In sub-Saharan Africa, where HIV infections are the highest in the world, high rates of severe and even fatal *Cryptosporidium* infection have been reported (Mor and Tzipori 2008). However, nothing is known about the epidemiology of this disease in a wildlife livestock interface context representative of Southern Africa.