

Combination of participatory approaches and molecular diagnostics to investigate the epidemiology of Haemorrhagic Septicaemia in camels (*Camelus dromedarius*)

I.V.Gluecks¹, M.Younan^{1,2}, S.Maloo¹, C.Ewers³, A.Bethe³, D.Kehara¹, J.Kimari⁴

¹Vétérinaires Sans Frontières Suisse, Nairobi, Kenya

²Kenya Agricultural Research Institute, Nairobi, Kenya

³Institute of Microbiology and Epizootics, Vet. Faculty, Free University Berlin, Germany

⁴Analabs Ltd., Nairobi, Kenya

For pastoralists living in the semi arid and arid lands of Somalia and Northern Kenya the dromedary camel (*Camelus dromedarius*) is the most important livestock species in terms of food security. The camel is an essential partner for their livelihood and the main source of milk, especially during the dry season. Furthermore it provides them with meat, means of transport and plays an important role for the socio-cultural set up of the community.

Pasteurella (P.) multocida Carter serotype B:2 and E:2 is the cause of Haemorrhagic Septicaemia (HS), a highly fatal disease in bovines. The role of *P. multocida* in HS of camels remains unclear. In Somalia and Kenya HS of camels is known to pastoralists as “Khanid” (Rendille), “Quarir” (Somali), “Quandich” (Gabbra) or “Quandho” (Borana). During participatory assessments HS was ranked by pastoralists in North Kenya and in North Somalia among the first to fourth most important health problem of camels.

There is deep clinical and epidemiological knowledge of the disease in pastoralist communities, which has remained largely untapped up to now.

To bridge the gap between indigenous and scientific knowledge this study combines conventional bacteriology, molecular diagnostic tools and participatory epidemiology to:

1. Build up an epidemiological database on HS in camels
2. Determine the carrier status of camels for *Pasteurella multocida* and other Pasteurellaceae species in North Kenya
3. Investigate outbreaks of HS in camels and to identify *Pasteurella multocida* and other potential pathogens using bacteriological and molecular tools (Polymerase Chain Reaction, PCR)
4. Disseminate the study results back to camel owners, veterinary auxiliaries and professionals and relevant organisations involved in provision of animal health services to pastoralist communities

Pasteurella multocida Carter serotype B:2 and E:2 was neither isolated nor was the serotype B:2 and E:2 specific DNA sequence present in eluates of nasal swabs from 392 individual camels from all major camel keeping districts in Kenya. PE data confirmed the economic importance and mostly seasonal occurrence of HS outbreaks in camels in North Kenya. Additional diagnostic and PE findings are discussed in this paper.