



Tropentag, October 9-11, 2007, Witzenhausen

“Utilisation of diversity in land use systems:
Sustainable and organic approaches to meet human needs”

***Haemophilus somnus*: A Cause of Chronic Encephalopathy of Cattle in the Sudan?**

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Abstract

Haemophilus somnus (*Histophilus somni*) has been reported in many countries around the world as a cause of many disease manifestations in cattle and sheep including thrombotic meningoencephalitis, septicaemia, pneumonia, abortion, orchitis, arthritis and myocarditis, etc... which are collectively known as “*Haemophilus somnus* disease complex”. *Haemophilus somnus* disease has not been reported in the Sudan till 1998, when El Sannousi and co-workers diagnosed a chronic disease of cattle with nervous manifestations as “thromboembolic meningoencephalitis” caused by *Haemophilus somnus*. This disease was observed to affect cattle following stresses such as viral or parasitic diseases or exhaustion due to walking long distances. The disease is characterised by decreased heat tolerance and hair over growth in addition to other symptoms which include respiratory distress, hyper-salivation, plegia of one or both hind limbs, elevated temperature, decreased milk yield, reproductive failure and decreased appetite with consequent loss of body condition. In another separate study, the same investigators showed that most of these symptoms can be alleviated or abolished by treatment with antibiotics that can cross the blood brain barrier, confirming their previous diagnosis of the disease and the bacterial nature of the causative agent. In the present investigation we revised the relation of *H. somnus* to this disease by re-identification of some of the early isolated bacteria by molecular methods. With PCR using primers specific to *H. somnus*, four of these isolates were either negative or yielded non-specific amplicons. Further identification by 16S rDNA sequencing confirmed the PCR results. Another part of the investigation was conducted using ELISA for the detection of anti-*H. somnus* antibodies in affected cattle. Although ELISA results showed varying degrees of antibody titre in sera from both affected and apparently healthy cattle, healthy cattle had relatively higher antibody titres against *H. somnus*. These results are consistent with results of other investigators, who reported that cattle with lower titre against *H. somnus* were more susceptible to *H. somnus* disease.

Keywords: Cattle!thrombotic meningoencephalitis, *Haemophilus somnus*, *Histophilus somni*, Sudan