SUMMARY RESEARCH REPORT:
British Veterinary Association & Vetwork UK

Wildlife Defence: A Field Investigation into the conservative control of Wildebeest-associated Malignant Catarrhal Fever (A1HV-1) on a dairy farm in Kenya.

Despite afflicting a large number of species worldwide, malignant catarrhal fever (MCF) is still poorly understood. In Africa, the disease is known to be caused by ruminant γ-herpesviruses alcelaphine herpesvirus (A1HV-1), with wildebeest (Connochaetes spp.) as its asymptomatic reservoir host. It causes a fatal lymphoproliferative disease in cattle, as well as other ungulates, and there is still no effective disease control. A major hurdle, particularly for rural farmers, is that the clinical signs of MCF are often very similar, if not indistinguishable, from other enteric and vesicular disease (Figure 1). In addition the majority of cases present with mortality in the absence of clinical signs. This means that the farmer has no chance to provide supportive therapy or treatment of any kind. Although a large amount of research is being done, work on vaccination has so far been unsuccessful (Plowright et al., 1975). With no medical prevention and no cure determined, control of transmission is essential.

Figure 1: Dairy cow showing ocular opacity and mucopurulent nasal discharge.
(*Image curtesy of Sanctuary Farm, Kenya*)

With the kind support of Vetwork UK, this study fulfilled its aim to provide an in-depth analysis of a single farm population to realise possible points of contact between cattle and wildebeest, and determine which livestock are most at risk and why.

This study is the first known to describe an MCF problem on a large scale dairy farm with known exposure to wildebeest. During the investigation, there was unquestionable evidence of wildebeest calving within the farm boundaries (Figure 2). It was also noted that a fence had been constructed to separate cattle and their grazing areas from the wildbeest part-way through the study period. A historical cohort study approach was utilised to produce a descriptive analysis using time-to-event data. The results provided evidence that breed and gender did not increase the risk of contracting MCF. Age was found to be a factor of significance, with calves less than 6 months being more at risk from MCF than any other age.

Figure 2: Adult wildebeest grooming a day-old calve. Photo taken on farm.

With treatment still unavailable, the current focus should be on implementing stringent control of cattle-wildebeest interaction. A study into the cost-benefit analysis of constructing a dividing fence would be beneficial. In the interim, a potential option suggested by previous studies is starting and finishing daily grazing 1-2 hours later than is currently practised (Bedelian et al. 2007). This is to allow time for destruction of any virus on the pasture through sunlight exposure. Other areas that require investigation are the importance of biosecurity, the role (if any) of equine species in MCF transmission and the development of an effective vaccine for farms that have a significant problem with WA-MCF.

On a personal level, the experiences gained whilst undertaking this study were momentous. I spent a lot of time working alongside native Kenyans, learning their way of life and improving personal skills such as communication and management. I was able to appreciate the land and wildlife of the area alongside the farming, which highlighted the importance of One Health. Overall I am truly grateful to everyone who supported and dedicated time to the project. I hope the results will further add to the effort in combating MCF world-wide.

Figure 3: Farm manager with livestock.

References:

Bedelian, C., Nkedianye, D. and Herrero, M. (2007) 'Maasai perception of the impact and incidence of malignant catarrhal fever (MCF) in southern Kenya', Prev Vet Med, 78(3-4), 296-316.

Plowright, W. et al., 1975. Immunisation of cattle against the herpesvirus of malignant catarrhal fever: failure of inactivated culture vaccines with adjuvant. Research in Veterinary Science 19, 159-166.

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