Foot-and-mouth disease (FMD) is a controlled disease in accordance with the South African Animal Diseases Act (Act 35) of 1984. In South Africa, FMD is endemic in the Kruger National Park (KNP), where it is maintained through persistent infections of African buffalo. During 2005-2015, at least one FMD outbreak has occurred per year in the FMD protection zone with the exception of 2005, 2007, and 2008 (Table 1). Continuing outbreaks in the protection zone threaten the FMD-free status of the remainder of the country.

**Results**

- **Mpumalanga and Limpopo FMD protection zones with vaccination** had 193 functioning dip-tanks with 73% (141/193) being located in Mpumalanga Province (Figure 1).
- The proportion of affected cattle and cattle at the start of each outbreak were not normally distributed and therefore log transformed prior to statistical analysis.
- There was significant spatial clustering of the proportion of cattle affected by FMD in Limpopo and Mpumalanga Provinces (Table 2).

- The risk of FMD outbreaks were descriptively higher for the dip-tanks that were close to the western boundary of the Kruger National Park (KNP) (Figure 2).
- The risk of FMD outbreaks in the Ehlanzeni North-Bushbuckridge area of Mpumalanga Province appeared to increase with increasing cattle and dip-tank density (Figure 3).
- Cattle density and affected cattle proportions also appeared to be descriptively related within Limpopo Province.

**Discussion**

- The combined analysis of FMD outbreaks in both provinces was not significant despite significant clustering when each province was evaluated on its own.
- The cattle distribution might have an important effect on the observed clustering and further analyses are necessary to assess these patterns.
- The two dip-tanks further away from the western boundary of KNP might have been false-positives rather than representing true FMD outbreaks. Few cattle were affected in these dip-tanks (1/870 and 3/1344 respectively) and representing true FMD outbreaks. Few cattle were affected in these dip-tanks (1/870 and 3/1344 respectively) and clinical signs and PCR were used to confirm the FMDV spread rather than virus isolation.

**Acknowledgment**

- This work is based on research supported in part by the National Research Foundation of South Africa. (Grant Numbers 90578 and 76734)
- Mpumalanga Veterinary Services.
- Limpopo Veterinary Services.
- Centre of Wildlife Studies-Hans Hoheisen Wildlife Research Station.