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Camel trypanosomiasis was confirmed in selected northern Kenya herds using the enzyme linked immunosorbent assay (ELISA), Mouse Inoculation (MI) and Blood Smear (BS) techniques. The ELISA results indicated current or past trypanosome prevalence rates of 72-95 percent. MI and BS techniques revealed current infection rates up to 19.2 and 11.5 percent, respectively. Trypanosome infection rates were significantly elevated during the wet season based on the MI diagnostic technique. The mean infection rates were  $13.7 \pm 5$  and  $4.55 \pm 2.2$  for the wet and dry season, respectively. There were no seasonal differences in infection rates in camels based on the ELISA technique. Active transmission of camel trypanosomiasis was ascertained by regular monitoring of 10 sentinel camels. Three of these sentinel camels became infected 8-9 months after introduction, which in the absence of *Glossina* spp., supported the concept of mechanical transmission. The trypanosome species involved was confirmed to be *Trypanosoma evansi* from the results of a preliminary survey.