

Nymphs of the brown ear tick, *Rhipicephalus appendiculatus*, were fed on heparinised bovine blood infected with *Theileria parva* parasites in an in vitro feeding system consisting of rabbit skin membranes. The main feeding and development parameters such as the mean attachment rate, feeding duration and engorgement weights of membrane-fed ticks were not significantly different from nymphs fed on cattle. The moulting rate was also comparable although a slight significant difference was observed. Assessment of infection prevalence and abundance with *T. parva* in adults indicated that the membrane-fed ticks acquired infection to the same level as those fed on cattle. Stabilates prepared from both the membrane- and cattle-fed adult ticks were found to be infective and caused severe reactions in susceptible cattle. When the immunised cattle were challenged with a lethal homologous dose of *T. parva* (Marikebuni), they were found to be immune.