

ABSTRACT

Brucellosis is an important zoonotic disease occurring worldwide. In animals, it causes reproductive failures such as abortions, stillbirths or birth of unthrifty neonates. Humans are infected by exposure to infected animals or animal products. Brucellosis results in economic loss to the farmer, high treatment costs and loss of man-hours. This paper reports a cross-sectional study carried out in Baringo County. It involved serological testing using serum and milk, detection of *Brucella* DNA through polymerase chain reaction (PCR), and establishing factors associated with the disease through analysis of filled questionnaires. Farms were randomly selected and blood samples from selected cattle (n= 250), sheep (n= 142) and goats (n= 166) were collected in sterile plain vacutainer bottles. Bulk raw cattle milk (n=83) was also collected. Risk estimates for brucellosis infection were calculated. Twenty three (9.2%) of the 250 cattle serum samples reacted positive to Rose Bengal Plate test (RBPT) while 17 (6.8%) reacted positive to cELISA. The 166 caprine serum samples had 17 (10.2%) positive reactors to RBPT and 11 (6.6%) by cELISA. Positive ovine serum samples were 10 (7%) and 7 (4.9%) on RBPT and cELISA, respectively. The sensitivity and specificity of RBPT, with respect to cELISA, was 88.6% and 96.4%, respectively with a predictive value positive of 62% and predictive value negative of 99%. The overall *Brucella* positivity on the bulk milk samples was 9.5%. *Brucella abortus* DNA was detected in 11 cattle, in two goats and in one sheep blood clots. This study established that brucellosis occurs in livestock in Baringo County, and that the predominant causative species is *B. abortus*. The study also established that over 10% of the people in the area were not aware of the risk factors associated with the disease; hence they were easily exposed and infected