Over a period of 11 months, 435 milk samples were collected from 92 lactating female camels on a ranch in Northern Kenya that was traditionally managed. The samples were examined bacteriologically to determine the causative agents of camel mastitis in Kenya. 145 samples (33.3%) yielded no growth. The most prevalent pathogen was group D (non-enterococci) streptococci, which was 30.0% of the total isolates. The other dominant organisms were coagulase-negative staphylococcus (CNS)(20.1%), as follows: *Staphylococcus aureus* (16.0%), *Streptococcus agalactiae* (1.5%) and *Streptococcus dysgalactiae* (3.6%). Although *Streptococcus agalactiae* and *Streptococcus dysgalactiae* appear low in prevalence, they were associated with subclinical mastitis. However, *Streptococcus agalactiae* and *S. aureus* were ranked as infectious pathogens while the group D streptococci, *Streptococcus dysgalactiae*, CNS, coliforms and Micrococci were ranked as environmental pathogens.