

Abstract:

Sheep are an important source of meat in Kenya. However, there are different sheep types raised in different agro-ecological zones and their genetic status is unknown. This study was designed to establish this. Using samples of blood from 391 fat-tailed sheep from five districts in Kenya, variation/similarities in their blood proteins, namely albumin, transferrin, esterase-A, esterase-C and haemoglobin was studied. Protein of Merino sheep was also used as a reference. Transferrin, esterase-A and esterase-C were polymorphic in all the populations investigated, while albumin was monomorphic for the S allele in all the fat-tailed sheep, and haemoglobin was fixed for the B allele in Kwale, Makueni and Siaya populations but was variable in Kakamega, Kajiado and Merino populations. The degree of within and between populations genetic diversity and variability was low with Kajiado population, being on average the most diverse among the indigenous sheep. The genetic distance and phylogenetic tree analysis indicated close genetic relationships among the fat-tailed sheep, which were clearly distinguished from the Merino