



Phenotypic traits, reproductive and milk production performances of indigenous goats in south Kivu, democratic republic of Congo

Simon Patrick Baenyi^{1,2#}, Joseph Owino Junga², Christian Keambou Tiambo³, Ahadi Bwihangane Birindwa¹, Rodrigue Ayagirwe Basengere¹, Shukuru Wasso¹, Mushagalusa Ciza¹, Katcho Karume¹, Joel Winyo Ochieng²

¹ Department of Animal Production, Faculty of Agricultural and Environmental Sciences, Université Evangélique en Afrique, P.O. Box 3323Bukavu, DR Congo

² Department of Animal Production, Faculty of Veterinary Medicine, University of Nairobi, P.O. Box 29053 Nairobi, 00625, Kenya

³ Centre for Tropical Livestock Genetics and Health – International Livestock Research Institute (CTLGH-ILRI); P.O. Box 30707, Nairobi 00100, Kenya

#Corresponding author: Patrick Baenyi Simon, Université Evangélique en Afrique, Bukavu, South Kivu, Democratic Republic of Congo, +243 97383510, 3323Bukavu, baenyipatrick@gmail.com, Orcid ID: <https://orcid.org/0000-0002-3831-7316>

Submitted on 5th October 2021. Published online at www.m.elewa.org/journals/ on 31st December 2021
<https://doi.org/10.35759/JABs.168.6>

ABSTRACT

Objectives: Quantification of the phenotypic variations of indigenous goats in South Kivu and its relationship with economically important farm traits could open the way for both the conservation and breeding options for goat improvement.

Methodology and Results: This study quantified the phenotypic variation and its association with questionnaire-based reproductive and lactation parameters in indigenous female goats of South Kivu. Six reproductive traits, three lactation parameters, and fourteen morpho biometric traits were analysed following a general linear model. The shape of the horn, the shape of the tail and the eye colour explained the variability among goat populations. The length and the thickness of the tail positively correlated ($p < 0.01$) with the number of kidding per year, with the age of doe at the first service, and with the number of kidding. The lactation length was correlated ($r = 0.33$) ($p < 0.05$) with the estimated age of kids at weaning.

Conclusions and application of findings: The results suggest that these traits can act as phenotypic markers for goat selection. However, further research based on genome-wide association studies is required to confirm and verify these findings and to elucidate either they are genetically based or are from environmental influence.

Keywords: DR Congo, a female goat, milking potential, phenotypic traits, prolific