Tropentag, September 20-22, 2023, hybrid conference

"Competing pathways for equitable food systems transformation: Trade-offs and synergies"

Ultrasonic measurements of fetal parameters for estimation of gestational period in Nubian goats supplemented with *Moringa oleifera* leaves

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Abstract

The present study aimed to evaluate the influence of *Moringa oleifera* (MO) leaves supplement to the pregnant goat feed on fetal growth in Nubian goats in Butana area using the application of real-time ultrasnography and to determine the relationship between the gestational period (GP) with the measurements of crown rump length (CRL), biparietal diameter (BPD) and femur length (FL). Twenty (20) multiparous apparently healthy Nubian does with fair body condition score (BCS) and 1.5–2 years old were used in this study. The animals were allocated randomly according to the level of MO leaves supplemented in the roughages. Measurements were taken three times within the pregnancy period for measuring the CRL, BPD and FL. Crown rump length measurement at day 45 of pregnancy, showed significant difference ($p < 0.05$) between groups. The highest mean measurement for CRL (4.63±0.69 cm) was achieved in group D, while the lowest mean value (3.60±0.53 cm) was recorded in group B. Mean value for FL measurement (2.24±0.42 cm) and BPD measurement (2.40±0.70 cm) at day 80 of pregnancy, showed no significant difference between groups ($p > 0.05$). The results demonstrated that CRL, BPD and FL were significantly correlated with GP ($p < 0.05$). The CRL was positively correlated with GP (R =0.501) followed by the BPD (R =0.614) and the FL was strongly positively correlated with GP (R =0.957).

Supplementation of MO leaves for pregnant Nubian does indicated that, CRL, FL and BPD measurements were correlated to fetal age. Mean values of crown crump length (CRL) obtained at day 45 of pregnancy, were significantly different ($p < 0.05$) between groups. The longest measurements were found in group D (4.63±0.69 cm) while the least mean value was recorded in group B (3.60±0.53 cm). The best time to obtain the measurements for the femur length was at the end of the 2nd trimester of pregnancy.

The current study concluded that, supplementation of *Moringa oleifera* in goat feed, does not influence significantly the measurements of femur length and biparietal diameter of the fetus, while the measurements of crown rump length is influenced.

Keywords: Fetal measurements, gestational age, Nubian goats

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