

Title of Article : Improving the reproductive efficiency of the goat: vaginal cytology and vulvar biometry as predictors of estrus/breeding time in synchronized West African dwarf goat does.

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Abstract: The characteristics of exfoliated vaginal cells and vulvar biometry following estrus synchronization via two injections of 5mg Lutalyse® administered 7 days apart were investigated with the aim of their possible use to predict estrus in six adult WAD does. Four adult WAD bucks recently passed as satisfactory potential breeders were also involved in the study. The animals were maintained on 12% crude protein concentrate, greens and fresh water ad libitum. All measurements in the does were taken at an interval of 24 hours for six days beginning with the day of 2nd Lutalyse® injection. The does were introduced to the bucks 48 hours after the 2nd dose of Lutalyse® and separated from them after the 6th day. The 72-96 and 96-120 hours vaginal smears of 5 does (i.e. 83.3%) were characteristic during the study. They were positive for sperm cells and showed sharp increase in the degree of clumping of exfoliated cells. During these periods also, the differences in the percentage of superficial cells (i.e. 77.4 ± 1.05 and 56.4 ± 0.77) over other epithelial cells (12.2 ± 0.38 and 1.30 ± 0.82) respectively were significant ($P < 0.05$). The percentage leucocytes also varied during the study but increased sharply during 96 -120 hours. The result on vulvar biometry between 0-72 hours and the period during which mating occurred (i.e. 72-120 hours) was not significant ($P > 0.05$). All does with vaginal smear positive for sperm cells were confirmed pregnant at day 60 following mating by ultrasonography. The results of this study show that two injections of 5mg Lutalyse® 7 days apart will produce fertile estrus in the WAD doe. In conclusion, a careful evaluation of 24 hourly exfoliated vaginal cells will enhance synchronized estrus detection in WAD goat and improve their reproductive efficiency.

Key words: Vaginal cytology; Vulva biometry; Synchronization; Lutalyse®; Predict; Estrus; Doe.