Ultrasonographic Observations of Corpora Lutea Dynamic during Oestrous Cycle in Serrana Goats

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Serrana goats (n=42) were evaluated by daily transrectal ultrasonography (US) for the number, size and appearance of corpora lutea (CL) in order to assess their evolution and functionality during the oestrous cycle. All oestruses were detected by two vasectomized bucks and confirmed by the LH preovulatory peak and US-disappearance of the ovulatory follicle (day 0). Plasma progesterone (P4) was evaluated biweekly. Each CL was classified as evolving (heterogeneous ecotexture and irregular contour) or mid-cycle (granular ecotexture and regular contour). CL were first detected on day 2.9 ± 1.0 (mean ± SD; n = 60) with 8.2 ± 2.5 mm diameter. CL reached maximum size on day 10.7 ± 3.2 with 12.5 ± 1.6 mm, and started to decrease (p < 0.001) 3 days before ovulation of the next oestrous cycle (day -3). CL had a central cavity in 79.7 %, having a larger diameter at the onset (5.5 ± 2.3 mm) than in the middle/end of the oestrous cycle (3.3 ± 1.8 mm; P < 0.001). On day 2, 33.3 % of the total CL visualized were classified as evolving. This number decreased to 5 % on day 10 and increased to 48.3 % on day -3, reached 90 % on day -1 (p < 0.001). The correlation between the proportion of evolving CL and P4 levels was r = -0.77 (p < 0.001; n = 190). The correlation between the size of CL and the P4 levels was r = 0.63 (P < 0.001; n = 87) in goats with one CL per oestrous cycle. These results suggest that, in goats, luteal function can be evaluated through the appearance of CL as observed by US.