

Time of ovulation in nulliparous and multiparous goats

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Fifteen nulliparous and nine multiparous Serrana goats were used, through two successive oestrous cycles, in order to characterize their ovulation time with regard to the number of ovulations after induced and natural oestrus during the breeding season. The onset of oestrus was detected by the amount of vasectomized bucks after oestrus synchronization with prostaglandin, given 10 days apart, and in the following two expected natural oestrus. The preovulatory LH peak was determined from blood samples collected 0, 4, 8, 12, 16, 20 and 24 h after onset of oestrus. A transrectal ovarian ultrasound scanning was performed 20, 24, 28, 32, 36, 40, 44 and 60 h after onset of oestrus, for the detection of ovulations by means of the disappearance of large follicles (>4 to 5 mm). Single ovulations were observed in 76% of oestrous periods in nulliparous goats and in 18% of nulliparous goats. The onset of oestrus to LH peak interval was lower in nulliparous (12.1 ± 0.9 h, $n = 38$) than in multiparous (15.6 ± 1.0 h, $n = 22$, $P < 0.05$) goats with no oestrus interaction effects ($P > 0.05$). The LH peak to first ovulation interval was higher after natural (18.9 ± 0.7 h, $n = 36$) than after induced (15.8 ± 1.2 h, $n = 24$, $P < 0.05$) oestrus. The onset of oestrus to total ovulation interval was influenced by parity ($P < 0.01$) and oestrus type ($P < 0.05$) with a length of 30.1 ± 1.1 h ($n = 15$) and 33.4 ± 1.5 h ($n = 9$) for induced oestrus of nulliparous and multiparous goats, respectively, and 32.5 ± 1.0 h ($n = 23$) and 36.5 ± 1.1 h ($n = 13$) for natural oestrus of nulliparous and multiparous goats, respectively. The onset of oestrus to first ovulation interval was not influenced by parity, but an interval of 8.0 ± 1.6 h was observed between the first and second ovulations in polyovulatory oestrus. Consequently, nulliparous goats that are predominantly monovular ovulate earlier than multiparous goats that are predominantly polyovulatory. In conclusion, significant differences occurred in the number and time of ovulations between nulliparous and multiparous goats. More research is necessary for a deeper understanding of the mechanisms regulating monovulatory and polyovulatory oestrous cycles regarding the parity of goats.

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