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Effect of camel seminal plasma and mechanical stimulus on ovulating response of rabbit does

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Induced ovulation is regulated by complex neuroendocrine factors. In this regard, two main mechanisms are generally recognized: animals where ovulation is mainly induced by neuroendocrine stimulus (rabbit, cat) and species where the seminal plasma is responsible for triggering the GnRH release (llama, alpaca, camel). The presence of an ovulation-inducing factor (namely β-NGF) in the seminal plasma of several species has been widely documented. Intramuscular (i.m.) injection of rabbit seminal plasma in female llamas induces ovulation. At the same time, the occurrence of occasional ovulation (about 10%) has been found in artificially-inseminated rabbit does without GnRH administration indicating that the ovulatory responses could be affected by mechanical stimulation and by seminal plasma components. Thus, the present study was conducted to evaluate the effect of the camel seminal plasma to induce ovulation and changes in LH and progesterone concentration in rabbits. The β-NGF concentration of the camel SP was 127 pg/mL (ELISA method). Four multiparous New Zealand does (body weight = 3.6 kg) were synchronized and submitted to intramuscular injection of 1 mL of camel seminal plasma and vaginal introduction of an empty catheter. For LH determination (EIA method), blood samples were collected every 30 minutes until 3 hours after treatment. Progesterone was determined (RIA method) 30 minutes before treatment and every 4 days until day 12. All does were receptive to artificial insemination (turgid and reddish vulvar lips) and peripheral concentrations of both LH and progesterone indicated that none of the does ovulated. This fact does not confirm the hypothesis of a synergic effect between seminal plasma and vaginal stimulation in inducing sporadic rabbit ovulation. However, the low number of does treated and the possible low content of β-NGF could be responsible for the lack of effect.

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