441 EFFECTS OF BYPASS LIPID SUPPLEMENTATION IN THE TRANSITION PERIOD ON REPRODUCTIVE PARAMETERS IN DAIRY GOATS AFTER PARTURITION

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Abstract

The use of lipids for nutrition supplementation during reproduction phases is called flushing and directly influences body weight and body condition score, which could alter ovulation and fertility rate. Studies have reported the effects of its use for dairy cattle, but for goats this kind of information is incipient. The aim of this study was to evaluate the use of bypass lipid enriched in polyunsaturated fatty acids (Megalac® Arm and Hammer, Church & Dwight Company, Princeton, NJ, USA) in the transition period (i.e. 3 weeks before and after parturition) on the return of ovarian activity. This study was conducted from March to May 2009, in Piau/MG (21°35′S latitude and43°15′W longitude), Brazil. Nineteen Toggenburg (n = 16) and Saanen (n = 3) goats were equally assigned according to breed, body weight, and condition score into 4 treatments: animals received 2% dry matter of fat supplementation 21 days before and after parturition (T1), only before parturition (T2), or only after parturition (T3); the control group received no supplemental fat (T4). Goats were fed a complete mixture of napier grass and corn silage in a 50:50 forage/concentration ratio 4 times daily. Transrectal ultrasonography (5-MHz transducer; Aloka SSD 500®, Tokyo, Japan) was performed daily from 10 days after parturition until detection of ovulation. Estrous onset and its duration were detected daily with a fertile buck. Statistical analysis were performed using all tests at the 95% confidence interval with a SAEG® program (Funarbe, Viçosa, Brazil). The results are presented as mean ± SD. The interval (days) from parturition to first estrus was 20.5 ± 2.2 (T1), 30.0 ± 17.4 (T2), 20.2 ± 2.1 (T3), and 19.0 ± 2.5 (T4), and to first ovulation was 26.3 ± 4.0 (T1), 22.4 ± 3.3 (T2), 24.4 ± 1.1 (T3), and 24.2 ± 3.6 (T4) (P > 0.05). The diameter of ovulatory follicles (mm) was similar (P > 0.05) for T1 (7.21 ± 0.30), T2 (6.86 ± 0.31),T3 (6.66 ± 0.27), and T4 (7.32 ± 0.64). The number of ovulations was also not different (P > 0.05) for T1 (1.5 ± 0.3),T2 (1.2 ± 0.2), T3 (1.4 ± 0.2), and T4 (1.0 ± 0.0). A negative correlation (r = -0.68; P < 0.005) was detected between body condition score at the parturition and the interval from parturition to the first estrus, as well as to the first ovulation (r = -0.48; P < 0.05). A positive correlation (r = 0.47; P < 0.05) was found between body weight on the day of ovulation and the number of ovulations. These data show the importance of body weight and condition score to reproductive performance after parturition. No significant differences were registered among all treatments on reproductive parameters for goats after this amount of lipid supplementation. There is a need for more studies to be done using different supplement concentrations in order to achieve better reproductive performances after parturition.

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