

SUB-FERTILITY IN BEEF CATTLE: FOLLICLE DYNAMICS AND PROGESTERONE CONCENTRATIONS DURING THE ESTRUS CYCLE

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The repeat breeder syndrome has been characterised in dairy cows, but the experimental model used virgin heifers as controls, which may potentially be sub-fertile. The aim of this study was to characterize the pattern of follicle and corpus luteum (CL) development and progesterone concentrations during the estrus cycle in fertile and sub-fertile adult beef cows. Eleven Hereford cows (fertile n=5; sub-fertile n=6) were used in this experiment. The categories were defined based on their pregnancy rate at 24 and 73 months of age after five services at each age (three by artificial insemination [AI] and two by natural mating) in fertile (pregnant at first AI at two years old, pregnant ≥ 3 times at 73 months of age) and sub-fertile (pregnant at the fourth or fifth service by natural mating or did not get pregnant at 24 months of age and got pregnant one or two times at 73 months of age). At 90 months of age, were synchronized with two intramuscular prostaglandin injections given 14 d apart. The ovarian scanning began on the day of the second PG injection and continued daily for a complete estrous cycle up to d 7 of the following cycle. Plasma samples were collected daily by jugular venepuncture to determinate progesterone concentrations by RIA. Data were analysed by ANOVA, using the GLM and MIXED procedures in SAS. There were no differences in body weight, body condition or height between fertile and sub-fertile cows. There were no differences between groups in follicular dynamics, area of the CL, number of 2 to 5 mm follicles, total number of follicles, duration of the estrous cycle or interval from estrus to ovulation. However, progesterone concentrations were higher in sub-fertile (7.58 ± 0.96 ng/ml) than in fertile (5.19 ± 1.08 ng/ml; $P < 0.01$) cows from d 8 to 18 of the cycle. In conclusion, under the conditions in which this experiment was conducted, sub-fertile cows had higher concentrations of progesterone than fertile cows. These findings could be associated with the expression of its receptors in the uterus² known to affect embryo survival.

Palabras clave: sub-fertility, follicular dynamics, progesterone

Modalidad: Poster