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### 196. Effect of GnRH pulse infusion of LH profiles and ovarian follicle populations at 7 weeks *post partum* in beef cows in different body conditions

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An experiment was conducted to test the hypothesis that post-partum anoestrus in beef cows is prolonged in low condition cows because of a reduced LH pulse frequency. Beef cows calving in either low body condition (BC) (L 2.07 (s.e. 0.38); no. = 24) or high condition (H 2.73 (s.e. 0.27); no. = 12) were fed to maintain BC after calving. From 5 weeks *post partum* half of the L cows were infused every 2 h for 14 to 18 days with 2 µg boluses of GnRH in 2 ml saline (G). All of the other cows received saline only (S). LH pulse frequency (pulses per h) was higher in G than S cows (0.32 *v.* 0.23 (s.e.d. 0.031),  $P = 0.06$ ) but it was not affected by BC. LH and FSH concentrations were not affected by GnRH infusion or BC (1.25 (s.e. 0.175) µg/l; 16.61 (s.e. 2.31) µg/l) respectively. The numbers of small (3 to 7.9 mm diameter) and large ( $\geq 8$  mm diameter) follicles (25.5 (s.e. 12.08) and 1.9 (s.e. 0.93) respectively) were not affected by GnRH infusion or BC but a higher proportion of the LG cows ovulated by the end of the infusion period compared with LS and HS cows (10/12 *v.* 1/12 and 1/12;  $P < 0.001$ ). Serum progesterone concentrations were recorded three times per week and were  $>1.5$  µg/l in 8/12, 1/12 and 1/12 cows in the LG, LS and HS groups respectively; two of 12 cows in the LG group had a corpus luteum (CL), but progesterone concentrations  $<1.5$  µg/l indicating that the CL was not functional. The results suggest that, while FSH is not a limiting factor in influencing the onset of cyclic activity *post partum*, LH pulsatility has an important rôle in determining the time of ovulation in post-partum beef cows. However, development of a fully functional CL may depend on additional factors.