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Effect of progestin treatment on formation of persistent follicles in beef cows

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Effective estrous synchronization protocols frequently utilize progestins (melengestrol acetate [MGA] and Controlled Internal Drug Release [CIDR] inserts) to synchronize estrus and ovulation. Previous research demonstrated that long-term treatment with MGA, in the absence of a corpus luteum, caused formation of persistent follicles and resulted in low fertility. The specific aims of this project were to determine if the presence of a new or used CIDR, in cows without a corpus luteum, would induce the formation of persistent follicles and to compare the pattern of serum concentrations of progesterone in postpartum cows treated with a new or used CIDR to luteal phase concentrations of progesterone (P4) in non-treated cows. Normally cycling cows were allocated by days postpartum, age and body condition score into four treatment groups: Control (n=10), MGA (n=11; 0.5 lbs/hdday), new CIDR (n=9; 1.38 g P4), and used CIDR (n=9; new CIDR's previously inserted into cows for 7 d). Progestin treatment (MGA or CIDR) began on d 4 post-estrus and PG was injected on d 6 to induce luteolysis (d 0 = estrus). MGA or CIDR treatment continued for 14 d and length of a follicular wave was defined as the interval from follicular recruitment to ovulation or initiation of a new wave. Length of the first follicular wave (d) was 10.7, 15.6, 15.4, and 13.2 (P=.07) and maximum diameter (mm) of the dominant follicle was 14.1, 17.3b, 16.7, and 16.1 (P.50) in the used CIDR, new CIDR, and MGA groups. In summary, treatment with a new or used CIDR induced formation of persistent follicles in beef cows.