

ABILITY OF CIDRs AND MELENGESTROL ACETATE TO INDUCE ESTROUS CYCLING STATUS IN ANESTROUS POSTPARTUM BEEF COWS

George A. Perry^{1,2}, Michael F. Smith¹, and Thomas W. Geary²

¹Department of Animal Science, University of Missouri, Columbia, MO 65211

²USDA-ARS, Fort Keogh LARRL, Miles City, MT 59301

The anestrous postpartum interval in beef cows is a major factor contributing to cows failing to become pregnant during a defined breeding season. Objectives of this study were to determine the effectiveness of CIDRs (1.9 g progesterone), low dose of melengestrol acetate (MGA; LM; 0.5 mg/hd/d), or high dose of MGA (HM; 4.0 mg/hd/d) to induce ovulation in suckled, anestrous postpartum beef cows, and to determine the effectiveness of each treatment to eliminate short estrous cycles following the first postpartum ovulation. Multiparous beef cows ($n = 100$) were equally assigned to one of four treatments: CIDR, LM, HM, or control by days postpartum, body condition, and body weight. All cows were fed carrier (wheat mid pellets, 0.9072-kg/hd/d) with (LM 0.55 mg MGA/kg, HM 4.41 mg MGA/kg) or without MGA for 7 d (day 0 to 6). CIDRs were inserted on the first day of treatment (day 0) and were removed 6 d later (day 6). Estrous behavior was monitored continuously from day 0 until day 35 using Heatwatch (electronic mount detectors). All cows were bled 7 d before the initiation of treatment, and three times weekly from day 0 to day 35. Cows with serum concentrations of progesterone >1 ng/mL on days -7 or 0 were removed from the study. More ($P < 0.02$) cows receiving the CIDR treatment [13/22 (59%)] exhibited standing estrus between days 7 and 12 than cows receiving the LM [3/18 (17%)], HM [4/21 (19%)], or control [1/22 (5%)] treatments. In addition, the cumulative number of CIDR-treated cows that had ovulated (serum concentrations of progesterone >1 ng/mL) was greater ($P < 0.05$) than the cumulative number of LM or HM treated cows that had ovulated between days 14 and 30 and control-treated cows between days 11 and 25. The cumulative number of cows that had ovulated did not differ ($P > 0.05$) among control, HM, and LM treated cows except on day 15 when more LM and control treated cows had ovulated compared to HM-treated cows. The percentage of cows that exhibited standing estrus before the first postpartum ovulation (CIDR 65%, LM 57%, HM 35%, and control 30%) did not differ ($P = 0.09$) among treatments. However, following the first ovulation postpartum luteal life span (interval from serum concentrations of progesterone >1 ng/mL until <1 ng/mL) and percentage of cows with a normal luteal life span (≥ 10 d) was greater ($P < 0.01$) in CIDR-treated cows [14.0 ± 0.8 d; 20/20 (100%)] compared to LM [6.2 ± 1.0 d; 3/13 (23%)], HM [9.6 ± 1.0 d; 8/14 (57%)], or control [6.1 ± 0.9 d; 4/17 (24%)] treated cows, and greater ($P < 0.03$) in HM compared to LM and control treated cows. In the present study, treatment of early postpartum suckled beef cows with CIDRs induced ovulation and initiated estrous cycles with normal length luteal life spans. Treatment with MGA (normal or high dose) however, did not induce ovulation earlier than control treated cows, but a high dose of MGA did increase the percentage of cows with normal luteal life spans following the first ovulation postpartum.

Keywords: Melengestrol acetate, Induction of estrous cycles, Short estrous cycles