

Pregnancy reduction in heifers treated at birth with commercial implants releasing progesterone and estradiol benzoate

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Previous studies demonstrated that exposure of neonatal cattle to a combination of progesterone (P) and estradiol benzoate (EB), beginning at birth and released over 200 days had anti-uterotrophic effects in adults, including reduced utero-cervical wet weight, endometrial and myometrial areas. The objective of this study was to determine the effect on percent pregnancy and weaning weight in pubertal heifers treated as follows: no implant (Group C), once at birth with a commercial growth-promoting implant releasing for 200 days either 100 mg P & 10 mg EB (Group 1X), or 200 mg P & 20 mg EB (Group 2X). Beef heifers (n=399) at three locations over three consecutive calving seasons were assigned to the three treatments in sequential birth order. Heifers were weaned at approximately seven to nine months of age and at approximately 14 to 16 months of age were exposed to bulls on pasture for approximately two to three months at a ratio of approximately 25 heifers to one bull. All bulls had passed a breeding soundness examination. Heifers were examined for pregnancy by rectal palpation two to four months after end of breeding. Least squares means for percent pregnancy (standard error) were 83 (3.8), 66 (3.9), 32 (4.0) for groups C, 1X, and 2X, respectively. Implanting decreased percent pregnancy (Groups 1X & 2X < C, P<.0001) although there was a location x treatment interaction (P<.002). Implanting with an increased concentration of P & EB decreased percent pregnancy (Group 2X < 1X, P<.0001). Least squares means for adjusted 205-day weaning weights in kg (standard error) were 197.5 (2.8), 209.9 (2.8), and 202.2 (2.8) for groups C, 1X and 2X, respectively. Implanting increased adjusted weaning weights (Groups 1X & 2X > C, P<.01). Implanting with a lower concentration of P & EB increased adjusted weaning weights (Group 1X > 2X, P<.05). This study demonstrates that neonatal exposure of beef heifers to P & EB from birth decreased percent pregnancy and increased weaning weights in a manner related to steroid dosage.

Key words: pregnancy, heifer, implant, progesterone, estradiol