PROGESTERONE CONCENTRATIONS, OCCURRENCE OF ESTRUS AND PREGNANCY RATES IN BRAHMAN COWS SUBMITTED TO SYNCHRONIZATION OF ESTRUS WITH REUSING NORGESTOMET EAR IMPLANTS

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Introduction: In previous studies have described negative effects of elevated circulating concentrations of progesterone during the synchronization protocols on fertility in cattle, probably because high circulating concentrations of progesterone during these protocols reduced luteinizing hormone pulse frequency, dominant follicle development, estrus detection and pregnancy rates in beef cows.

Objective: To evaluate the effect of reusing norgestomet implant on progesterone concentrations, occurrence of estrus and pregnancy rates in Brahman (Bos indicus) cows submitted to several estrous synchronization protocols.

Material and methods: Sixty cows were given a reusing norgestomet ear implant (Crestar, Intervet, Colombia) sc (8 d) on Day 0 and were assigned to receive one of four protocols:

1. 2.0 mg estradiol benzoate (EB; 2.0 mL Benzoato de estradiol Syntex, Syntex, Argentina) and 25.0 mg progesterone (P₄; 1.0 mL Gestavec, Vecol, Colombia) on d 0 and 150 µg prostaglandin F₂α (PGF; 2.0 mL Ciclase DL, Syntex, Argentina) on d 8 (EB + P₄ + PGF; n = 15);

2. 5.0 mg estradiol valerate (EV) and 3.0 mg norgestomet (NG; 2.0 mL Crestar, Intervet, Colombia) on d 0 (EV + NG; n = 15);

3. same as EB + P₄ + PGF protocol, plus a 400 UI equine chorionic gonadotropin (eCG; 2.0 mL Folligon, Intervet, Colombia) on d 8 (EB + P₄ + PGF + eCG; n = 15);

4. same as EV + NG protocol, plus a 400 UI eCG on d 8 (EV + NG + eCG; n = 15).

The implant was removed on Day 8, with artificial insemination (AI) 12 h after detection of estrus. Pregnancy was diagnosed 45 d after AI. Blood samples were collected on Day 0, 4 and on Day 8 (after ear implant placed) from the coccygeal vein into vacutainer tubes for progesterone analysis by RIA.

Results and discussion: There were greater (P< 0.05) percentages of estrous detection in cows treated with EV+ NG + eCG (66.7%) than in cows treated with EB + P₄ + PGF (26.6%). Cows receiving EB + P₄ + PGF + eCG had greater plasma progesterone concentration (P< 0.05) on Day 0 (6.20 ng/mL) than other treatments. On Day 4, progesterone concentrations were greater in cows treated with EB + P₄ + PGF and EV + NG + eCG (6.23 ng/mL and 5.82 ng/mL; P < 0.05). Pregnancy rate was not affected by treatments (P>0.05).

Conclusion: Reusing norgestomet ear implants were effective for synchronizing estrus in Brahman beef cows.

Keywords: Bos indicus, progesterone, estradiol, eCG, prostaglandin