PREGNANCY RATES IN BEEF CATTLE TREATED WITH PROSTAGLANDIN F2α AT DEVICE INSERTION AND REMOVAL OF A NEW OR USED PROGESTERONE VAGINAL DEVICE

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Although treatments with progesterone releasing devices and estradiol benzoate (EB) have resulted in acceptable pregnancy rates at a fixed-time AI (FTA I) in cattle, it has been recently suggested that some pregnancy failure may occur due to ovulation of small follicles which may result in small CL and short luteal phases. Previous studies have shown that advancing the time of luteolysis, by giving PGF2α at the time of a P4-device insertion, increased the diameter of the ovulatory follicle and resulted in more synchronous ovulations than in those cows treated with PGF2α at device removal (Bó et al., ICAR 2004). An experiment was designed to test the hypothesis that lowering circulating levels of P4 during follicle wave emergence and growth, by giving PGF2α at the time of P4-device insertion and/or by using a previously used device would increase pregnancy rates in cows FTAI. One hundred and seventy-eight lactating Angus and cross bred zebu cows, 60 to 90 days post-partum and body condition score >2.5 (1 to 5 scale) were used. All cows received 2 mg EB im and a new or previously used P4-device (1 g of P4; DIB, Syntex, Argentina) on Day 0. Groups were further subdivided to receive 75 µg of D(+) cloprostenol (Ciclase, Syntex) im on Day 0 and again at DIB removal (Day 8) or a single treatment of 150 µg D (+) cloprostenol on Day 8, in a 2 x 2 factorial design. All cows also received 1 mg EB im on Day 9. Cows treated with PGF2α only on Day 8 were FTAI 54h after removal of a new DIB whereas those in the other three treatment groups were FTAI 48h after DIB removal. FTAI times were performed 12 h before the mean time of ovulation, based on the results of a previous experiment (Bó et al, ICAR 2004). Pregnancy rates were determined by ultrasonography 90 days later. Data were
analyzed using Logistic Regression to determine the effects of time of PGF$_{2\alpha}$ administration or new vs used DIB on pregnancy rates. There was no significant effect of time PGF$_{2\alpha}$ administration (P=0.88) or new vs used DIB (P=0.15) on pregnancy rates (P=0.09). The proportions and percentages of heifers that became pregnant were 44/91 (48.3%) for heifers treated with PGF$_{2\alpha}$ on Days 0 and 8 and 42/87 (48.0%) for those treated with PGF only on Day 8. Furthermore, 38/89 (42.7%) heifers treated with new DIB and 48/89 (52.9%) heifers treated with used DIB were pregnant. Therefore, results did not support the hypothesis that the lower plasma P4 concentrations, produced by a used DIB and/or early luteolysis, would increase pregnancy rates in post-partum cows.