

Abstracts - 35th Annual Meeting of the Brazilian Embryo Technology Society (SBTE) FTAI/FTET/AI

Effect of different TAI protocols in 14-month-old Nelore (Bos indicus) heifers

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Resumo

The aim of the present study was to evaluate the efficiency of two TAI protocols in precocious Nelore (Bos indicus) heifers aging 14 months. A total of 518 Nelore heifers from farms located in MS and BA (Agropecuária Jacarezinho), Brazil were used. At the beginning of the protocol, heifers were randomized by BCS (2.95± 0.03), BW (279.1±2.47) and sire and divided into two treatments: 9dayP4 (n=259) and 7dayP4 (n=259). Heifers from 9dayP4 received on D0 a reused intravaginal P4 device (Previously used for 27 days; CIDR®; Zoetis, Guarulhos, SP-Brazil), 2 mg estradiol benzoate (EB; Gonadiol®, Zoetis) and 2.5 mg of dinoprost tromethamine (Lutalyse®; Zoetis). After 9 days (D9), P4 device was removed and heifers received 2.5 mg of dinoprost, 0.5mg of estradiol cypionate (EC; ECP®; Zoetis) and 200IU of eCG (Novormon®; Zoetis). Heifers from 7dayP4 received on D2 an intravaginal P4 device (0.36g of P4; PRIMER PR®; Agener União), 2 mg of EB (RIC BE®; Agener União, São Paulo, SP-Brazil) and 0.53mg of sodic cloprostenol (Estron®; Agener União). After 7 days (D9), P4 device was removed and heifers received 0.53 mg of sodic cloprostenol, 0.5mg of EC (Cipiotec®; Agener União) and 200 IU of eCG (Novormon®; Zoetis). At the same time, all heifers were painted with chalk on their tailheads, and removal of chalk on D11 was used as an indication of estrus. All heifers were inseminated on the same day (D11). A subset of heifers (n=66) was evaluated by US (Mindray® DP-2200Vet) in order to measure the diameter of the dominant follicle (DF) on D11. Statistical analyses were performed using GLIMMIX of SAS 9.4. There was a statistical difference in P4 device loss rate between groups [9dayP4=6.6% (17/259) vs. 7dayP4=0.4% (1/259); P<0.001]. The incidence of vaginitis at P4 removal was lower for 7dayP4 than 9dayP4 group [7.3% (19/249) vs. 39% (101/259); P<0.001]. Heifers treated with 7dayP4 group presented a lower proportion of arching of the column (1.8% vs 27.4%; P<0.0001) and elevated tail (49.6% vs 89;4%; P<0.0001). No difference was found for estrus detection [9dayP4=56.8% (147/259); 7dayP4=61.8% (160/259); P=0.13]. However, the DF was larger in 7dayP4 when compared to 9day P4 group (9.87 \pm 0.44 vs. 8.74 \pm 0.52; P=0.04). It is not possible to verify an early ovulation, however it is an important and specific information for the paper. A tendency for greater pregnancy rate in 7dayP4 was observed [7dayP4= 44.0% (114/259) vs. 9dayP4= 37.8% (98/259); P=0.07]. In conclusion, the 7dayP4 group presented a lower P4 device loss rate and vaginitis incidence and larger DF on AI. The pregnancy rate tended to be greater in 7dayP4.

Acknowledgements

Agropecuária Jacarezinho and Agener União Saúde Animal.