Animal Reproduction

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FTAI/FTET/AI

Progesterone treatments before timed artificial insemination in heifers from taurine and synthetic breeds

Fabrício Dias Alves Gularte [1], Otávio Saraiva Pires [1], Caroline Oliveira Farias [1], Monique Tomazele Rovani [2], Gabriella Velho [2], André Cabrera Dalto [2], Arnaldo Diniz Vieira [1], Rogério Ferreira [3], Rafael Gianella Mondadori [1], Bernardo Garziera Gasperin [1]

[1] UFPel - Universidade Federal de Pelotas (Capão do Leão-RS), [2] UFRGS - Universidade Federal do Rio Grande do Sul (Porto Alegre- RS), [3] UDESC - Universidade do Estado de Santa Catarina (Chapecó- SC)

Resumo

Progesterone treatment advance puberty in Bos indicus heifers (Lima et al., Theriogenology, 154:128-34, 2020). Thus, the aim of the present study was to evaluate the effect of one or two injections of long-acting injectable progesterone (iP4) before TAI in taurine and synthetic heifers. In exp. 1, 462 Aberdeen Angus heifers (14-18 months) maintained on improved native pastures at a farm located in Acégua-RS were used, with BCS of 2.5 to 3. On D -48 the animals were weighed, the reproductive tract score (RTS) and BCS were evaluated, both on a scale from 1 to 5. The heifers were assigned to one of three groups: 1) control (n=188): no treatment before TAI protocol; 2) 2 iP4 (n=129): two administrations of iP4 (175 mg i.m; Progecio- Agener União, Brazil) on D -48 and D -24 before the beginning of the TAI protocol (D 0); 3) iP4 (n=145): one iP4 administration (175 mg i.m.) on D -24. The TAI protocol consisted of a P4 device (0.5 g; ReproOne- Biogénesis, Brazil) and estradiol benzoate (2 mg; Bioestrogen- Biogénesis, Brazil) i.m, on D0. On D8, tailheads were painted for estrus detection, the devices were removed and 0.5 mg of estradiol cypionate (CroniCip- Biogénesis, Brazil), 300 IU of eCG (Ecegon- Biogénesis, Brazil), and 150 µg of D-cloprostenol sodium (Croniben-Biogénesis, Brazil) were administered i.m. On D10, TAI was performed, and the heifers that did not show estrus received 10.5 µg of buserelin acetate (Gonaxal- Biogénesis, Brazil) i.m. Data were analyzed by logistic regression considering the effect of group, RTS, BCS and body weight. In exp. 2, 51 Brangus heifers from a farm located in Eldorado do Sul- RS, with BCS between 2.5 and 4, were allocated to: control (n=16), 2 iP4 (n=18) or iP4 (n=17) groups and submitted to a TAI protocol, as described in Exp 1, but without eCG and GnRH. Ovulation rate was evaluated by chi-square test, whereas P4 concentration were compared seven and 14 days after TAI using Student's paired T test. In exp. 1 the mean weight of heifers on D -48 and D 0 was 226±1.9 and 270±2.3 kg, respectively (average daily gain of 0.76±0.02 kg). No difference was observed on pregnancy rates 30 days after TAI [Control=49% (93/188); 2 iP4=46% (59/129); iP4=46% (66/145); P>0.05]. There was no interaction of treatments with RTS, BCS and weight evaluated on D -48 (P>0.05). In exp. 2, the heifers presented 302.1±4.1 kg of live weight on the day of TAI. There was no effect of treatments on P4 concentrations on D7 and D14 [Control= 3.7±0.5 and 9.6±0.9; 2 iP4= 5.5±0.7 and 12.2±1.5; iP4= 4.7±0.8 and 11.3±1.8 ng/mL P>0.05], being observed an effect of day (P≤0.05). Ovulation rate did not differ among groups [Control=56.2% (9/16); 2 iP4=61.1% (11/18); iP4=58.8% (10/17) P>0.05]. It is concluded that iP4 did not affect pregnancy rate, ovulation rate and progesterone synthesis. Future studies will be conducted to evaluate the effect of iP4 under extensive conditions.

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