Effect of body condition score and antral follicle count on pregnancy rate of postpartum Nelore cows submitted to protocol for timed artificial insemination and resynchronization

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The present study aimed to evaluate the effect of antral follicles count ≥3mm (AFC) and body condition score (BCS) on the pregnancy rate (P/AI, %) of 603 Nelore multiparous cows, 30 to 45 days post-partum. In exp. 1, 323 cows, BCS=3.0±1.0 were used. AFC was performed by transrectal ultrasound (Mindray, 7.5Mhz, China) and females received an IM application of 2 mg of estradiol benzoate (Gonadiol, Zoetis, Brazil) and 1.9g of progesterone intravaginal device (CIDR, Zoetis, Brazil, D-11). On D-2, device was removed and 300 IU of eCG (Novormon, Zoetis, Brazil), 1 mg of estradiol cypionate (ECP, Zoetis, Brazil), 12.5 mg of dinoprost (Lutalyse, Zoetis, Brazil) IM were administered. TAI was performed 48 hours after CIDR removal (D0). On D31, pregnancy diagnosis was performed and the non-pregnant cows were resynchronized by the same treatment (TAI D42).

In exp. 2, 280 cows, BCS=2.8±0.4, were synchronized by the same methodology, however, on D22 all cows received a CIDR and Gonadiol. Pregnancy diagnosis was performed on D31 and CIDR withdrawn from pregnant cows and non-pregnant cows were resynchronized according to the treatment described (TAI D33).

Cows were distributed according to score into low (≤13), intermediate (14-36) and high AFC (≥37 follicles) groups. Data were analyzed using GLIMMIX (P<0.05). In exp. 1, in the first TAI, low AFC cows had a higher P/AI [67.5(73/108); P=0.03] than high and intermediate AFC [51.8(56/108), 57.0(61/107)]. BCS ≤2.75 cows showed lower P/AI (54.2(102/188) than BCS ≥3.0 [65.1(88/135) P=0.05]. AFC didn't influence on resynchronization P/AI [low:37.1(13/35), intermediate:58.6(27/46), high:50.0(26/52) P=0.18] however, BCS≤2.75 cows had a low P/AI (P=0.04) [46.5(40/86)] than BCS≥3.0 [55.3(26/47)]. Considering the two TAI, the cumulative P/AI showed an interaction between AFC and BCS (P<0.05) [Low AFC and BCS=3.0=91.6(44/48), BCSS=2.75=70.0(42/60) P=0.006, intermediate AFC and BCS=3.0=79.1(38/48), BCSS=2.75=84.7(50/59) P=0.47, high AFC and BCS≥3.0=82.0(32/39), BCSS=2.75=72.4(50/69) P=0.23].

In exp. 2, in the first TAI, low AFC cows had a higher P/AI [60.2(56/93) P=0.03] than intermediate [43.6(41/94)] and high AFC cows [44.1(41/93)] P=0.23]. BCS≤2.75 cows showed trend to lower P/AI (P=0.09) 45.1(70/155) than BCS≥3.0=54.4 (68/125)]. There was no effect of AFC and BCS on the resynchronization of P/AI [low AFC=40.5(15/37) intermediate AFC=35.8(19/53) high AFC=40.3(21/52) P=0.71] [BCS=2.75=37.6 (32/85) BCSS=3.0=40.3(23/57) P=0.80]. Cumulative P/AI was influenced by AFC [low=76.3(71/93) intermediate=63.8(60/94); high=66.6(62/93) P=0.04] regardless of BCS ≤2.75=65.8(102/155), ≥3.0=72.8(91/125) P=0.18]. In conclusion, AFC influenced the first TAI so after exposure to exogenous progesterone, no further effect on resynchronization. Low AFC and BCS≥3.0 cows showed better performance on 33 to 42 days of breeding season, possibly by increasing synchronization rates.

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