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Estrus identification methods as an alternative to optimize IATF results

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The objective of the present study was to compare the efficacy of different techniques for detection of estrus in Nellore cows submitted to FTAI protocols and their relationships with fertility. We used the techniques: T1-BOLUS: use of intraruminal bolus with temperature sensor (Trr), marker chalk in the sacro-caudal region: marker rod in the sacro-caudal region (SILVA et al., 2016), where: ESCT 1: no expression of estrus; ESCT2: low expression of estrus; ESCT3: high expression of estrus; T3- DRONE: visual observation of estrus using drone (DJI-PhAnton 3). The experiment was carried out at the EMBRAPA Gado de Corte, in Campo Grande - MS, with 44 cows multiparous, with an average weight of 372 ± 40.97 and BCS of 3.04 ± 0.60 (1-5), evaluated by the three techniques . Esophageal introduction of the intraruminal bolus with temperature sensor was performed and data collection was performed during days 8.9 and 10 of the FTAI protocol. The Trr works with a radio frequency telemetry system, whose basic principle is the use of a sensor that generates an electric impulse proportional to the physiological variation captured by antennas, which have a range of 30 meters. After bolus placement, the FTAI protocol used was: D0: placement of intravaginal device of P4 and application of EB (2mg) I.M .; D8: removal of the device and application of PGF2α (500μg) IM, ECP (1mg) IM and 300 IU of eCG, IM, and marking the animals with the chalk in the sacro-caudal region and in the dorsal region, to facilitate identification in observation visual analysis with the drone, which occurred twice a day (morning and afternoon) for 60 minutes on days 9 and 10. FTAT was performed at D10, where estrus expression (ESCT 1-3) was evaluated. Pregnancy diagnosis was performed 30 days after the FTAI, with transrectal ultrasonography. The expression of estrus according to the method was evaluated by the Chi-square test ($p < 0.05$). In order to analyze the effect of the method of detection of estrus in the probability of FTAI pregnancy, the PROC LOGISTIC package from SAS was used. The number of cows identified in estrus was: 61.36% (27/44) with BOLUS; 56.81% (25/44) with DRONE, and 75% (33/44) with BATT (considering ESCT 2 and 3), without differing the estrus% among detection methods (P = 0.17). The IATF pregnancy rate was 56% and the detection of barium enema had an effect (P = 0.006) on the probability of pregnancy of TAI, as well as on the DRONE group (P=0.01). In BOLUS, there was no effect on the probability of pregnancy (P=0.35). Comparison of the methods for the detection of estrus showed that the ability to observe the techniques was similar, however, when correlated with the pregnancy rate of the FTAI, the use of the marker stick and visual observation through drone images were more efficient.