FERTILITY RATES FOLLOWING FIXED-TIME ARTIFICIAL INSEMINATION IN DAIRY HEIFERS IN A PRACTICAL PROGESTERONE-BASED PROTOCOL

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The objective of this study was to determine conception rates following fixed time artificial insemination (TAI) in dairy heifers treated with a progesterone-based protocol. Crossbred dairy heifers (n = 39) received estradiol benzoate (2mg, i.m., Sincrodiol®, Ouro Fino, Brazil) and a intravaginal progesterone releasing device (IPRD, 1g progesterone, Sincrogest®; Ouro Fino, Brazil) in a random stage of the estrous cycle (Day 0). On day 7, the animals were treated with d-cloprostenol (500µg i.m, Sincrocio®; Ouro Fino, Brazil) and at day 9 the IPRD was removed. At day 11 a synthetic analogue of GnRH (10µg of buserelin acetate i.m., Sincroforte®, Ouro Fino, Brazil) was administered and the animals were TAI. The inseminations were performed using four different batches from the same Holstein bull and the follicular dynamics of all heifers were assessed by ultrasound (Shenzhen Emperor, 5 MHz, Nanshan, China) at each 8 hours from day 11 (application of GnRH + TAI) until ovulation has been detected. Pregnancy diagnoses were performed using four different batches from the same Holstein bull and the follicular dynamics of all heifers were assessed by ultrasound (Shenzhen Emperor, 5 MHz, Nanshan, China) at each 8 hours from day 11 (application of GnRH + TAI) until ovulation has been detected. Pregnancy diagnoses were performed by ultrasound at 29 and 61 days post-AI in order to determine the conception rate and pregnancy loss. The conception rate was analyzed by logistic model including in the model the effects of ovulation time after TAI (ovulation until 20h vs. between 20 and 32h). The ovulation rate obtained was 87.2% (34/39) and among the heifers that were synchronized, 12 ovulated until 20 hours after TAI (35.3%; 12/34) and 22 ovulated between 20 and 32 hours after TAI (64.7%; 22/34). The conception rates at 29 days and at 61 days post-AI were 61.5% (24/39) and no pregnancy loss was observed. In addition, no effects of ovulation time related to conception rate was detected (P = 0.25). The conception rate from heifers that ovulated until 20 hours after TAI was 58.3% (7/12) and the conception rate from heifers that ovulated between 20 and 32 hours after TAI was 77.3% (17/22). The results of the present study reinforce the possibility of making dairy cattle production more cost-effective using TAI. In conclusion, inseminating the heifers at the moment of GnRH injection in a progesterone-based TAI protocol is a practical strategy and also provided satisfactory results in dairy heifers.

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