

LUTEAL TISSUE AREA IN EMBRYO RECIPIENTS SYNCHRONIZED AND WITH SPONTANEOUS OR ESTRADIOL BENZOATE INDUCED OVULATION

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The necessity of synchrony between embryo donors and recipients requires the use of estrus synchronization protocols. The low efficiency of methods based only on prostaglandins or analogs administration resulted on the development of more complex synchronization protocols, associating progesterone or progestagens, eCG, prostaglandins and GnRH or estradiol benzoate. The aim of this study was to characterize the quality of corpus luteum formed after an estrus synchronization protocol in animals with spontaneous or estradiol benzoate (EB) induced ovulation. Holstein-Zebu crossbred heifers (N=30) were synchronized with Heatsynch protocol, but EB injection at the end of the treatment was only administered to the animals with no estrous signs up to 30h after CIDR remove. Before in ovulation (Day 7) the heifers were evaluated by ultra-sonography to identify and measure corpora lutea, using a portable ultrasound device equipped with a linear rectal 5 MHz probe. There was no difference in the percentage of animals presenting corpus luteum on day of in ovulation between heifers with spontaneous or EB induced ovulation (14/15, 93.3% vs. 13/15, 86.6%, respectively, $p>0.05$). The total corpora lutea area and the luteal tissue area (corrected to the presence of cavities), however, were larger in heifers with spontaneous ovulation when compared to those treated with EB ($3.68\pm0.33\text{cm}^2$ and $3.38\pm0.32\text{cm}^2$ vs. $2.18\pm0.15\text{cm}^2$ and $2.09\pm0.14\text{cm}^2$, respectively; $p<0.01$). The low pregnancy rate obtained after transfer of *in vitro* produced embryos in both groups (25.0% and 20.0%, respectively) is not conclusive on the effect of the difference observed in corpora lutea size. Considering conventional criteria used for embryo recipient selection, based on luteal area size, animals with spontaneous ovulation after a synchronization protocol forms a better group of recipients. Indeed, estrous behavior only occurs when follicles reach a maturation status associated with a larger diameter, and consequently associated with a larger luteal size. However, even inducing the formation of smaller corpora lutea, more animals become available to be used as recipients when EB is used, reducing embryo waste or the problems associated with cryopreservation of *in vitro* produced embryos.