

Seasonal Heat Stress Effect on Cholesterol, Estradiol and Progesterone during Follicular Development in Egyptian Buffalo

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Abstract : Biochemical and hormonal changes that occur in both follicular fluid and blood are involved in the control of ovarian physiology. The present study was conducted on follicular fluid and serum samples obtained from 708 buffaloes. Samples were examined for estradiol, progesterone, and cholesterol concentrations in relation to seasonal changes, ovarian follicular size, and stage of estrous cycle. The obtained results revealed that follicular fluid and serum levels of estradiol, progesterone, and cholesterol were significantly lower during summer and autumn when compared to winter and spring seasons. With the increase in follicular size, the follicular fluid levels of progesterone and cholesterol were significantly decreased, while estradiol levels were significantly increased. Estradiol and progesterone levels were significantly higher in follicular fluid than blood, while cholesterol was significantly lower in follicular fluid than serum. In conclusion, the current study threw a light on the hormonal changes in the follicular fluid and blood under the effect of heat stress which could be related to the low fertility of buffalo in the summer.

Keywords : buffalo, follicular fluid, folliculogenesis, seasonal changes, steroids

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