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Vitamin C Status and Nitric Oxide in Buffalo Ovarian Follicular Fluid in Relation to Seasonal Heat Stress and Phase of Estrous Cycle

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Abstract : Heat stress is a recognized problem causing huge economic losses to the buffalo breeders as well as dairy industry. The aim of the present work was to study the pattern of vitamin C and nitric oxide in follicular fluid of buffalo during different seasons of the year considering phase of estrous cycle. This study was conducted on 208 cyclic buffaloes slaughtered at Al-Qaliobia governorate, Egypt, over one year. The obtained results revealed that vitamin C in follicular fluid was significantly lower in summer than winter and spring. On the other hand, nitric oxide (NO) was significantly higher in summer and autumn than winter and spring. Both vitamin C and NO did not differ significantly between follicular and luteal phases. In conclusion, the present study revealed that alterations in concentrations of follicular fluid vitamin C and NO that occur in summer could be related to low summer fertility in buffalo.

Keywords : Buffalo, follicular fluid, vitamin C, nitric oxide, heat stress
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