



## Seasonal variation in ovarian functions in Egyptian buffalo and cattle

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**Abstract :** In the bovine (cattle and buffalo) fertility is a multifactorial process and is affected by environmental, genetic, disease and management factors. In the bovine, summer season annually causes huge economic losses to the global dairy industry. The present work was designed to compare the reproductive patterns in buffalo and cattle under the same environmental conditions during the four seasons of the year. This include the effect of season of the year on: 1) reproductive status; 2) effect of season on oocytes quality and recovery rate; and 3) effect of season on oocyte maturation rate *in vitro* in buffalo and cattle. Our results showed significant differences in reproductive activity between the four seasons. In cattle and buffalo the highest ( $P<0.01$ ) incidence of ovarian activity was recorded during winter and spring when compared with summer and autumn. Oocytes recovery rate was significantly higher ( $P<0.01$ ) in winter and spring than in summer and autumn. The percentages of excellent and good quality oocyte were significantly higher ( $P<0.01$ ) during winter and spring than summer and autumn, while, fair and denuded oocyte were significantly higher ( $P<0.01$ ) in summer and autumn than winter and spring in buffalo and cattle. Consequently, oocyte maturation rate was higher ( $P<0.01$ ) during winter and spring than summer and autumn. The results revealed that, in the cold environmental conditions the reproductive status, oocytes quality, yield and their maturation rate were higher in contrast to hot period in cattle and buffalo.

**Key words:** Season, Ovarian activity, Oocytes yield, Oocytes quality, maturation, buffaloes, cattle.