

**EFFECTS OF UREA DURING *IN VITRO* MATURATION ON  
EXPRESSION OF TUMOR NECROSIS FACTOR- AND  
INTERLEUKIN-1 IN BOVINE OOCYTES**

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**ABSTRACT**

Blood urea nitrogen (BUN) is high due to high protein content in feed. The high level of BUN can affect bovine reproduction systems including oocytes damage. The aim of this study is to determine urea as a cause of oocytes maturation damage and see TNF- and IL-1 expression levels in bovine oocytes during *in vitro* maturation. 276 bovine oocytes were obtained from cattle ovaries that taken from slaughterhouses. Bovine oocytes were grouped into 3 groups based on the treatment of urea addition in the *in vitro* maturation media, which consisted of p0 without the addition of urea; p1 with the addition of urea 20 mg/dl; p2 with the addition of urea 40 mg/dl and see expression level of TNF- and IL-1 with immunocytochemistry then processed with the application SPSS 21. The results of oocyte maturation are p0=51.25%, p1=52.43% and p2=46.88%. The results of TNF- expression data are p0=6.86±2,19, p1=9.31±0,63, and p2=9.38±1,17 and IL-1 expression data are p0=7.76±2,03, p1=7.93±1,42, and p2=8.26±1,11. There were significant differences between urea and expression of TNF- (P <0.05), but there were not significant differences between urea and expression of IL-1 (p <0.05). Urea can increase level of TNF- expression and IL-1 expression.

**Key words:** *In Vitro* Maturation, TNF- and IL-1