

Evaluation of Enzymatic Antioxidant Activity and Reproductive Hormones Near and After Lambing in Pregnant Ewes

Mosa F. Abbas¹, Husamaldeen A. Alsalam^{1*}, Noor S. Hasan¹, Haider R. Abbas¹

¹ *Theriogenology and Surgery Department, College of Veterinary Medicine, University of Basrah, Basrah, Iraq*

* *Corresponding author email: [husamaldeen.khalil@uobasrah.edu.iq](mailto:husalma@uobasrah.edu.iq)*

ABSTRACT

The current study examined the levels of antioxidants superoxide dismutase (SOD), catalase (CAT), glutathione peroxidase (GSH-Px), glutathione (GSH), and Malondialdehyde (MDA) and reproductive hormones (progesterone, estrogen, and cortisol) in pregnant local breed ewes and after lambing in the Basrah governorate. Twenty ewes were used in this study from several fields in the Basrah governorate. Blood sample collection was done in three different periods, pre-lambing, immediately after lambing, and two weeks after lambing. The result showed a significant decrease ($p < 0.05$) in SOD, CAT, and GSH-px activity before and during lambing compared to after. The results also confirmed a significant increase ($p < 0.05$) in the level of GSH pre and during lambing compared to after lambing. While evaluating, the level of MDA revealed a significant increase ($p < 0.05$) in its level during lambing compared to two weeks after. Hormonal analysis showed a significant increase ($p < 0.05$) in the levels of cortisol and estradiol pre and during lambing compared to after lambing, with a significant decrease ($p < 0.05$) in the levels of progesterone after lambing compared to before lambing. This study concluded that during lambing, ewes were under stress factors, and an internal mechanism represented by enzymatic antioxidants like SOD, CAT, and GSH-Px acted actively during this period to neutralize the side effects of stress.

Keywords: *Ewes, Antioxidant, Lambing, pregnancy*