# **Titre d’article**: *Reproduction performance and blood biochemical parameters in dairy cows: Relationship with oxidative stress status*

**Abstract :**

Background and Aim: During the last decades, reproduction performances declined dramatically worldwide, but little is known concerning the involvement of oxidative stress as a causative factor. Oxidative stress may act at different levels, with negative impacts on cell membrane integrity and other active molecules with potential subsequent effects on reproduction. The aim of the current study was to investigate the oxidative stress status in cows according to their reproductive performances. Materials and Methods: Peripheral blood concentration of two oxidative stress biomarkers, glutathione S-transferase (GST) and malondialdehyde (MDA), and other biochemical parameters (glucose, total lipids, cholesterol, triglycerides, albumin, total proteins, calcium, urea, creatinine, direct bilirubin, alanine aminotransferase, aspartate aminotransferase, and alkaline phosphatase) were determined in 40 healthy cows. Body condition score (BCS), calving to first service interval (FSI), calving to conception interval (CCI), and the number of service per conception (SPC) were simultaneously recorded for each cow. Results: Concerning FSI, three groups were established: Group 1 (from 44 to 60 days), Group 2 (from 60 to 70 days), and Group 3 (from 70 to 80 days). For CCI, two groups were considered: Group 1 (110 days). MDA showed significant high values only in cows with the lowest BCS (1.5) compared to cows with BCS note of 2.5 and 3.5. No significant difference was observed in cows oxidative stress status (MDA and GST) according to reproductive performances (FSI, CCI, and SPC) in all studied groups. Conclusion: The results revealed relatively altered oxidative stress status in cows with abnormal reproductive performances; however, no significant difference was recorded whatever the considered reproductive parameter.