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THE FUNCTIONAL STATE OF LIVER CELLS IN DAIRY COWS IN POSTPARTAL PEROID AND DURING LACTATION

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SUMMARY: The objective of this study was to determine characteristic blood parameters, i.e. indicators of the functional state of liver in the puerperal cows (n=15) and in those (n=15) from day 90 to day 100 of lactation. Blood glucose levels were statistically significantly lower (P<0.01) in the puerperal cows than in the cows examined during the maximum lactation period, which suggested a decreased gluconeogenesis in the liver. Significantly lower blood levels of total protein(P<0.01), albumin(P<0.01), urea (P<0.01)and triglyceride(P< 0.05) were recorded in the puerperal cows, which suggested the reduced synthetic capacity of liver cells in the early lactation cows. Blood bilirubin levels in the puerperal cows were significantly higher (P<0.05), which clearly indicated the reduced excretory capacity of the liver. Significantly increased (P<0.01) AST, GGT and LDH activities in the blood in the puerperal cows clearly evidenced the disturbed morphological and functional integrity of liver cells and the release of these intracellular enzymes into the blood. The obtained results suggested that fatty infiltration and different degrees of liver cell degeneration were recorded in the puerperal cows, as opposed to the cows during maximum lactation showing preserved morphological and functional capacities of hepatocytes.

Key words: *cows, protein, lipids, bilirubin, enzymes.*

INTRODUCTION

During the transition period, from immediately before to after parturition, and with the establishment of lactation, the organism in high-yielding dairy cows is pushed to its physiological limits, reaching maximum until day 120 of lactation, resulting in a substantial load on the organism, specifically on the digestive organs, liver, udder and the

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