

**PROTEIN METABOLISM AND ENZYME ACTIVITY
IN HIGH-PRODUCING
DAIRY COW WITH METABOLIC DISORDERS**

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The article presents data of the research of protein metabolism and enzyme activity in high-producing dairy cows suffering from metabolic disorders. It is indicated that most often among metabolic diseases in ruminants are detected ketosis, which, depending on the nature and the leakage severity, is the cause of a secondary osteodystrophy and steatosis.

Dysproteinemia, hypoalbuminemia and hyperglobulinemia have been established as a result of destructive changes in the liver of cows with ketosis, secondary osteodystrophy and steatosis. An increase ($p < 0.001$) in the activity of ALT and AST (by 28.5 % and 151.6 %, respectively) was observed in the blood of ketotic cows compared with healthy cows. In this case, the upper limits of physiological fluctuations of ALT activity were exceeded in 29 % of examined cows, and AST activity – in 95.4 %.

The AST activity in blood was 3-4 times higher than the physiological values ($p < 0.001$) in 68 % cows with secondary osteodystrophy and 94.8 % with steatosis. In addition to ALT and AST, an increase ($p < 0.05 - 0.001$) of γ -glutamyltransferase (GGT) activity in serum was found to be higher in more than 87 % ketotic cows and 72.5 % cows with secondary osteodystrophy features. The probable increase in the activity of ALT, AST, and GGT in serum of a significant proportion of sick cows indicates the development of cytolysis and cholestasis syndromes.

High levels of creatinine, urea, and increased GGT activity indicate that metabolic diseases (ketosis, which is complicated by secondary osteodystrophy and steatosis) occur with renal failure. Hyperproteinemia, hypoalbuminemia, high activity of AST and increased activity of GGT in cows with secondary osteodystrophy indicate the hepatobiliary damage.

Keywords: COW, PROTEIN METABOLISM, KETOSIS, SECONDARY OSTEODYSTROPHY, STEATOSIS, CREATININE, UREA.