



Trakia University
Faculty of Veterinary Medicine
Students Campus 6000
Stara Zagora, Bulgaria
and Hotel Calista, Starozagorski mineralni bani

CONGRESS PROCEEDINGS

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Evaluation of metabolic status in the Holstein dairy cows during different stages of lactation

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The objective of the present study was to estimate metabolic status in Holstein dairy cows during different stages of lactation, on the basis changes of blood concentrations of selected biochemical markers. Blood samples were collected from 100 Holstein dairy cows and blood serum parameters were evaluated. The cows were allocated to four groups according to the production period, including Group 1 – cows in early lactation (n=18), Group 2 – cows in full lactation (n=26), Group 3 – cows in mid lactation (n=25), and Group 4 – cows in late lactation (n=31). Statistically significant differences ($P < 0.01$) were found between the experimental groups of cows in blood NEFA, BHB, TP, TG, TChol, urea, globulin, levels, and enzyme activities of AST, ALT, ALP, GGT and LDH. The intensity of lipomobilisation (NEFA or BHB concentrations) correlated positively ($P < 0.05$) with the markers of cell damage or liver function impairment (tBIL.,serum AST, ALT, LDH and GGT activities), but negatively ($P < 0.05$) with the circulating concentrations of compounds synthesised in liver (glucose, TG and urea). All these biochemical metabolites may be used as important biochemical markers in the determination of the metabolic status in high-yielding dairy cows.

Key words: cows, lactation, blood, metabolites, correlations.