

METABOLIC STATUS AND BODY CONDITION SCORE OF ESTONIAN HOLSTEIN COWS AND THEIR RELATION TO SOME FERTILITY PARAMETERS

Katri Ling, Hanno Jaakson, Jaak Samarütel, Andres Leesmäe

*Institute of Animal Science, Estonian Agricultural University, Kreutzwaldi 1, 51 014 Tartu, Estonia,
tel. +372 7 313 402, e-mail: lki@eau.ee*

Summary. The objective of the study was to analyse relationships between some metabolites associated with cows energy and(or) protein status, body condition score (BCS) and fertility parameters on two Estonian commercial farms. Farm and(or) stage of gestation and(or) lactation were the factors affecting BCS and urea, cholesterol, triglycerides, glucose, ketone bodies, NEFA and total lipids concentrations and AST activity. Service period was longer on farm B but there was no difference between the farms in days to first service. Correlations between fertility parameters were positive in the case of AST, GLDH, cholesterol and total lipids. Negative correlations had urea, glucose, ketones, triglycerides and NEFA. Most of the correlations between BCS and metabolites occurred between 20 to 60 days in milk, that between BCS and AST, GLDH, glucose and ketone bodies being negative. Our investigations indicate that increased urea and ketone body levels may be potential risk factors of impaired fertility. Further investigations including progesterone profile analysis are needed to differentiate physiological factors influencing intervals from calving to first ovulation and from first ovulation to actual conception.

Keywords: Estonian Holstein cow, fertility, metabolic status, body condition score, energy balance, blood metabolites.