EFFECT DIETARY SUPPLEMENTATION OF PROPYLENE GLYCOL, VITAMIN E AND METHIONINE ON THE BIOCHEMICAL PROFILE OF COWS BLOOD PLASMA

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Researches were conducted on 4 groups of Ukrainian black-white breed cows, milk yields at previous lactation 5000–6000 kg, 5 animals in each group. The control group received balanced diet. To the diet of the 2nd, 3rd and 4th groups were added, respectively, 200 g of propylene glycol, 5 g of 50% concentrate of vitamin E and 20 g of 86% concentrate of protected methionine (MHA 86%) per cow per day. The experiment lasted for the last month of dry period and the first month of lactation. A week after calving in cows took venous blood.

Propylene glycol increased the plasma glucose concentration by 14% (p<0.05), and decreased concentration of triacylglycerols by 7.7% and NEFA to 1.78 times (p<0.01). Thus, feeding of propylene glycol provides increased synthesis of glucose in the liver and significantly reduces the release of fatty acids from adipose tissue. Such effects are very important for cows at fresh period when deficiency of glucose and excessive use of fat reserves occurs. Supplementation of cows diet with vitamin E resulted in increased concentrations of NEFA (p<0.05) and decreased cholesterol concentration in blood plasma (p<0.05). Methionine increased urea concentration in plasma by 31% (p<0.05). The content of urea in the blood of ruminant animals usually rises when increases the flow of ammonia from rumen. Reducing the concentration of ammonia in the rumen of cows was due not only to more effective use in the synthesis of microbial protein amino acids, but also intense passage of ammonia through the rumen wall. This ammonia likely did not negatively affect on liver function because blood aminotransferase activity in cows in this group was lower than in cows of control group (p <0.05–0.01). A common result of all three studied feed additives was reduced concentration of non esterified fatty acids in the blood plasma; these supplements reduce excessive use of body reserves, which is important for the prevention of ketosis.
Adding to the diet of propylene glycol increased cows milk yield by 3.4 kg (p<0.05). Addition vitamin E elevated milk fat content, therefore fat-corrected milk yield of cows grew on 2.6 kg (p<0.05). Methionine did not affect the milk yield.

**Keywords:** PROPYLENE GLYCOL, VITAMIN E, METHIONINE, COWS, BLOOD PLASMA, MILK.