PERFORMANCE AND COMPOSITION OF FATTY ACIDS IN MILK OF COWS FED DIETS WITH HIGH MOISTURE CORN OR CORN COB MIX

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Abstract. The aim of the present experiment was to compare production effects and the content of fatty acids in milk and metabolites in blood of cows in the first 100 days of lactation when cows were fed rations with high-moisture corn (HMC) or corn cob mix (CCM), both with 20% content of DM in TMR. The research was conducted on 36 HF multiparous cows divided into two feeding groups (HMC, CCM). Two periods of lactation were distinguished: to the 30th day and 31-100th days of lactation. DMI in both groups was similar and amounted to 23.85 kg. In the preliminary lactation phase (to the 30th day), a higher milk production (by 5.65 kg) with lower protein content in milk ($p \leq 0.01$), lower SFA content (particularly C_{12}, C_{14}, C_{16}) and higher MUFA content, including oleic acid ($p \leq 0.01$) was observed in cows fed CCM. Moreover, for HMC diet the contents of urea in milk and BUN were lower ($p \leq 0.01$) while the use of ration nitrogen and glucose concentration in blood were higher ($p \leq 0.05$ and 0.01 respectively) in comparison to the CCM diet. The lactation phase determined the FA profile in milk, TG level and total cholesterol in blood. There was no interaction observed between the diet type or lactation phase and ECM efficiency, fat content in milk, daily efficiency of fat and protein as well as the content of total protein in blood serum or the activity of AST and ALT enzymes. The use of simplified corn harvest technology in the form of corn cobs (CCM) may be the alternative to traditional harvest with a harvester which lowers the feeding costs of high-yielding dairy cows.

Keywords: corn cob mix (CCM), high moisture corn (HCM), silage, milk, fatty acid, blood parameters.