EFFECT OF SILAGE MADE FROM DIFFERENT PLANT RAW MATERIALS WITH THE ADDITION OF A FERMENTATION INHIBITOR ON THE PRODUCTION RESULTS OF DAIRY COWS

Cezary Purwin[1], Barbara Pysera[1], Antanas Sederevičius[2], Saulius Makauskas[3], Alva Traidaraitė[2], Krzysztof Lipiński[1]
[1]*Department of Animal Nutrition and Fodder Science, University of Warmia and Mazury in Olsztyn 10-718 Olsztyn, Oczapowskiego 5, Poland, purwin@uwm.edu.pl*
[2]*Department of Anatomy and Physiology, Veterinary Academy, Lithuanian University of Health Sciences Tilžės 18, LT-47181 Kaunas, Lithuania*
[3]*Department of Non-Infectious Diseases, Veterinary Academy, Lithuanian University of Health Sciences Tilžės 18, LT-47181 Kaunas, Lithuania*

Summary. The study was conducted on three dairy farms, under production conditions. Round bale silage was produced from grass mixture (G, GI), grass and red clover mixture (GRC, GRCI), and grass and alfalfa mixture (GA, GAI), with no additives or with the addition of a fermentation inhibitor. The effect of the inhibitor on production results was evaluated on 326 Holstein-Friesian (HF) cows kept in three free-stall barns. On each farm the cows were divided into two feeding groups by the analogue method. Apart from experimental silage, all cows received a constant amount of maize silage and different amounts of concentrate. Dry matter intake, milk yield and composition, and feed conversion were analyzed in all treatments. In addition, the effect of feeding experimental silage was determined as dependent on the level of concentrate supplementation (>9, 6.1 – 9, 3.1 – 6, 0 - 3, 0 kg). The fermentation inhibitor added to high-protein components during ensiling had a positive effect on the production results of dairy cows. The effectiveness of the fermentation inhibitor was affected by the type of ensiled raw material and by the level of concentrate supplementation. The additive was found to be most effective when added to silage made from grass mixture or grass and alfalfa mixture, offered to cows fed no concentrate or a diet supplemented with less than 3 kg/head/day of concentrated feed. The inhibitor added to silage produced from grass and red clover improved the production results of cows to the lowest degree. The additive inhibiting silage fermentation enabled to increase nitrogen utilization in cows, regardless of the botanical composition of ensiled raw material.

Keywords: fermentation inhibitor, silage, dairy cows.