EFFECTS OF DIFFERENT LEVELS OF EFFECTIVE NEUTRAL DETERGENT FIBER ON CHEWING ACTIVITY PARAMETERS AND INTAKE IN CLOSE-UP HOLSTEIN DAIRY COWS

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Introduction: Increasing close-up dry matter intake (DMI) could be a useful tool for decreasing the METABOLIC DISORDERS in dairy cows (Overton and Waldron, 2004). The fiber content of the feed is one of the most important factors related to intake in dairy cows (Yang and Beauchemin, 2006). Although decreasing the fiber content could positively affect intake in dairy cows, it also has potential to decrease the chewing activity and negatively affect dairy cow health. In this study, the effects of different levels of effective neutral detergent fiber (eNDF) were investigated on chewing activity and intake of close-up Holstein dairy cows.

Materials and methods: The 18 multiparous close-up Holstein dairy cows averaging BW 791.1 (SD=44.72) in 23d (SD=6) before expected calving date were assigned in a completely randomized design (n=6). Three isonitrogenous diets differing in effective fiber contents formulated which were contained high 30.40, moderate 27.38 and low 24.61% eNDF which were considered as treatments H, M and L, respectively. The cows were fed total mixed ration and dry matter intake was measured daily until calving. Chewing activity was determined for a period of 48h with 10 minutes intervals. Data were analyzed using Proc Mixed in SAS by using the following model: Yij = µ + Ti + Zj + TjZij + εij where T is the effect of treatment and Zj is the effect of time.

Results: Dry matter intake and chewing activity of the cows were affected significantly by treatments. Total chewing activity increased about 16% in treatment L compared with the treatment H.

Conclusion: The results of the present study show that decreasing the eNDF to 27.38% increased DMI that probably could have desirable effects on close-up cow, but greater decrease of eNDF to 24.61% which severely decreased chewing activity parameters is not recommendable because it is probable to have negative effects on dairy cow health.