

Effect of oat silage substitute on lactation performance of Holstein lactating cows ⁽¹⁾

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Abstract

The objectives of this study were to investigate the effects on 30% oat silage in lieu of corn silage in the diets for lactating cows and dry matter intake (DMI), daily milk yield (DMY), milk protein percentage (MPP), milk fat percentage (MFP), milk lactose percentage (MLP), milk solid non-fat (MSNF), milk total solid (MTS), somatic cell counts (SCC), milk urea nitrogen (MUN) and milk citric acid (MCA) were analyzed. This study was performed both in summer and winter. A total of 8 Holstein dairy cows were randomly allocated into two groups according to their body weight, milk yield, parity and days in milk. The cows fed on diets containing 0 (control) and 30% oat silage (included corn meal and *Lactobacillus* spp. and *Saccharomyces* spp.) in lieu of corn silage. The results of the summer experimental period showed that there were no differences between the control and 30% oat silage supplemented group on DMI (21.6 vs. 21.3 kg) DMY (26.5 vs. 27.4 kg), MPP (2.73 vs. 2.8%), MPF (3.43 vs. 3.61%), MLP (4.93 vs. 4.87%), MSNF (8.36 vs. 8.37%), MTS (11.8 vs. 11.9%), SCC (10.8 vs. 16 10^4 /mL), MUN (10.6 vs. 10.7 mg/dL) and MCA (150 vs. 163 mg/dL). The results of the winter experimental period showed that there were no differences between the control and 30% oat silage supplemented group on DMI (17.5 vs. 19.6 kg), DMY (24.7 vs. 24.8 kg), MPP (3.1 vs. 3.2%), MPF (3.87 vs. 4.17%), MLP (4.83 vs. 4.94%), MSNF (8.8 vs. 8.93%), MTS (12.5 vs. 12.9%), SCC (12.1 vs. 15.4 10^4 /mL), MUN (13.6 vs. 14.8 mg/dL) and MCA (159 vs. 149 mg/dL). In conclusion, the oat silage was evaluated by Flieg's score, which showed excellent quality and had the same nutritional value as corn silage. The use of 30% oat silage instead of corn silage in total mix ration had no adverse effect on DMI, DMY, MPP, MPF, MLP, SNF, TS, SCC, MUN and MCA. The oat silage could be deemed as a new option for dairy cattle feedstuff particular in winter period in northern Taiwan.

Key words: Dairy cattle, Oat grass, Silage, Lactation performance.

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