

Effect of Feeding Frequency on the Quality of TMR Available Throughout the Day

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Increased labor costs have resulted in many dairy producers providing the total daily allotment of TMR to their lactating dairy cows only once a day. Questions have been raised regarding the quality of the TMR available to the cows over the course of the day, particularly in cases where cows may sort for particular feed components. Thus, the objective of this study was to examine how the frequency of feed delivery affects the quality of available TMR over the course of the day. The experiment involved subjecting 4 groups of 12 lactating Holstein cows to each of two treatments in a cross-over design. The treatments were: 1) delivery of feed once per day (at 5:30am), and 2) delivery of feed twice per day (at 5:30am and 3:15pm). The cows were fed a TMR consisting of 20% corn silage, 10% grass silage, 9% chopped alfalfa hay, 10% chopped 3rd cut grass hay, 14% energy blend, and 37% protein supplement on a DM basis. The TMR was sampled from the feed bunk at 5:30am, 11:30am, 3:15pm, and 11:00pm, and the orts were sampled at 5:00am. Feed samples were then analyzed for fiber (%NDF and %ADF) content. This was done on the assumption that cows sort the feed, leaving the longer forage components, which may lead to an increase in the fiber content of the remaining feed. Results indicate that for both treatments, the fiber content of the feed increased throughout the day, however, the effect was greatest when feed was delivered once daily. When fresh feed was delivered twice daily, the fiber content of the feed increased significantly between 3:15pm and 11:00pm. Delivery of fresh feed once daily resulted in a significant increase in the fiber content of the feed between 3:15pm and 11:00pm and again between 11:00pm and 5:00am. There was also a tendency for the fiber content of the orts to be higher when fresh feed was delivered once daily. Using the initial fiber content values for the TMR components, and the final fiber content of the orts, we calculated the change in forage to concentrate ratio. Initially, the fresh feed for both treatments had a forage to concentrate ratio on a DM basis of 49:51, however, the remaining orts had a ratio of 83:17 and 59:41 for the once a day and twice a day treatments, respectively.

Take Home Message: Twice-a-day feed delivery reduces the variation in the composition of feed consumed by the cows. This could have dramatic effects for those submissive cows, which may have inadequate access to feed during peak feeding times.