

Top Producing Dairy Herds Feed More Forage Than You May Think

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The information in this article was compiled from surveys of forage and feeding programs from selected Wisconsin high-producing dairy herds. For this summary, data from 2004, 2007, and 2010 were combined when 6, 3, and 5 herds, respectively, were surveyed. Of the 14 herds surveyed, 10 were located in south-central Wisconsin with the remaining herds located in north-central or north-west Wisconsin. Surveys were a single snapshot taken at the same time across herds within each survey year. Milking cow herd size ranged as follows: 280-570 (2004), 60-331 (2007), and 85-2274 (2010). The DHI rolling herd average for milk ranged as follows: 29,000-31,000 lbs (2004), 30,000-33,000 lbs (2007), and 32,000-37,000 lbs (2010).

Detailed survey data can be found at: <http://www.uwex.edu/ces/dairynutrition/documents/2010wihigh-producingherdsppt.pdf>.

Across all survey years, herds were fed a mixture of corn silage and alfalfa silage in total mixed rations (TMR). Most of the herds included some (2-4 lbs per cow per day) high-quality dry alfalfa hay in their TMR, but usually only for early-lactation cows. Herd level dry matter intakes (DMI) were 55-60 lbs per cow per day and feed conversions were 1.6-1.8 lbs fat-corrected milk per lb DMI. Forage comprised 50-60% of TMR DM with up to 24% neutral detergent fiber (NDF) from forage in the TMR DM. Corn silage comprised 40-70% of the forage DM. The corn silage starch content (DM basis) ranged as follows: 25-32% (2004), 29-38% (2007), and 33-36% (2010). The alfalfa silage NDF content (DM basis) ranged as follows: 35-42% (2004), 37-38% (2007), and 34-47% (2010).

It was calculated that the following percentages of dietary nutrients were provided by forage: NDF (75%), physically-effective NDF (peNDF; 85%), crude protein (CP) (45%), starch (40%), non-fiber carbohydrates (55%), and energy (50%). Corn silage contributed more than alfalfa with regard to diet starch, while alfalfa contributed more than corn silage with regard to diet CP. Both contributions are important for reducing feed costs at this time as both corn grain and protein supplements are relatively expensive. The rest of the dietary peNDF was provided by whole cottonseed which was an ingredient in TMR of all survey herds. Most survey herds in 2004 and 2007, and all survey herds in 2010, were fed high-moisture corn (HMC). The HMC in 2007 and 2010 surveys averaged 30% moisture.

The estimated milk from forage (corn silage, alfalfa silage, and alfalfa hay) was ~60 lbs per cow per day on a dietary energy basis after apportioning the cow's energy needs to support maintenance and body weight gain to forage or concentrate, according to dietary forage to concentrate ratio. On a dietary protein basis, the estimated milk from forage was ~50 lbs per cow per day. On average, the estimated milk per ton of forage DM was ~3,000 lbs, or \$600 of gross milk revenue per ton of forage DM consumed by cows in these survey herds at a \$20 per cwt milk price.

Although high milk production is often attributed to high concentrate feeding, clearly these top-producing Wisconsin dairy herds rely heavily upon forages not only for fiber, but also for protein, starch, and energy contributions which have become more important during this period of high concentrate prices. Furthermore, the amount of milk produced from forage in these top-producing herds contributes significantly to their total production resulting in high milk revenue being generated per ton of forage DM, which underscores the importance of managing the forage production, harvest, and storage process to achieve high forage quality.