

Case Study: Dairies Utilizing Ultra-high Stock Density Grazing in the Northeast

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Ultra-high stock density (**UHSD**) grazing has recently gained interest in the dairy industry. However, little credible research exists to support anecdotal claims that forage and soil improvement occur through trampling high proportions (75+%) of mature forage into the soil by grazing dense groups of cattle on small paddocks (550,000+ kg per 0.4 ha) with long (60-90+ days) rest periods. Furthermore, UHSD may not be appropriate for northeastern dairies. A case study was conducted to evaluate grazing management of dairies that are early adopters of self-defined UHSD grazing. Data, collected on 4 dairy farms in PA and NY during the 2012 grazing season, included: forage and soil nutrient analyses, stock density, botanical composition and pasture stratification. Data were analyzed using the MIXED procedure of SAS. Least squares means are presented. Pasture area ranged from 80 to 250 ha with 60 to 270 lactating cows. Herds were mixed breed with milk yield ranging from 9 to 18 kg cow⁻¹. Stocking density ranged from 37,800 to 180,444 kg ha⁻¹ with an average 39 (\pm 7) day rest cycle. Forage consumed ranged from 50 to 70% of total forage available. Cows averaged 75% (\pm 18) consumption above 20 cm of growth with lower layers averaging 53% (\pm 11) consumption. Soil mineral content and pH were within recommended levels. Forage crude protein averaged 20% (\pm 3.5; DM basis) in June and 29% (\pm 3.7) in Oct. Neutral detergent fiber decreased from 52% to 34% (DM basis) from June until Oct. Forage net energy for lactation increased from 1.34 to 1.61 Mcal kg⁻¹ DM between the two grazings, which may have resulted from grazing at a less mature state in the autumn. Grazing dairies in the Northeast took a modified approach to current UHSD definitions by grazing forages slightly more mature than what has been recommended in rotational grazing systems, and slowing the rotation to allow plants to mature (but not nearly as mature as what has been anecdotally reported in other UHSD situations) to increase forage DM available as well as improve nutrient balance (e.g. protein and fiber) in forage to better meet nutritional needs. Data from this case study will help identify needs to compare this grazing strategy with more traditional methods.

Keywords: dairy, grazing, ultra-high stock density.