Evaluation of Cool Season Grass Haylage Fermented with Small Grains (Vermont Mini-Silo Experiment)

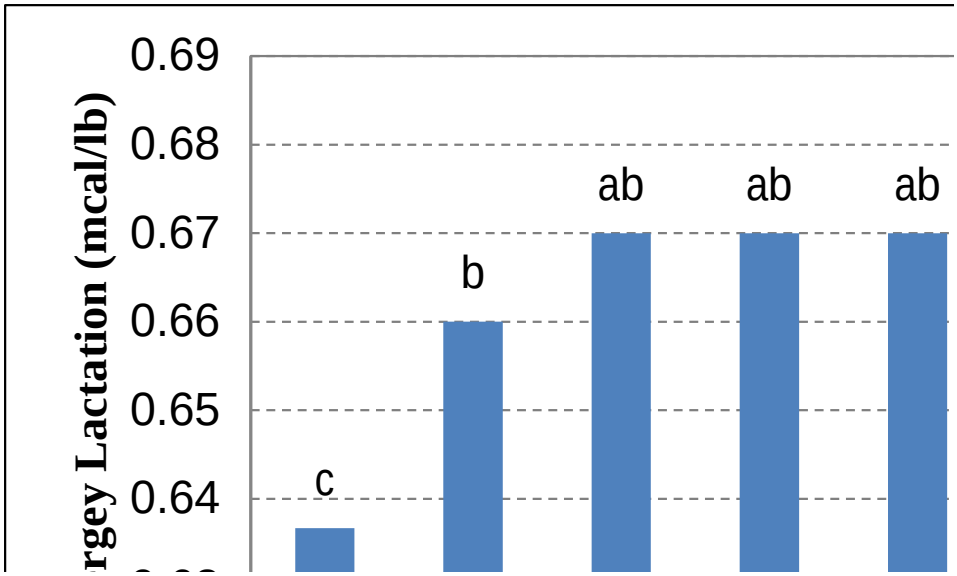
Dairy farmers are

Table 2. Agronomic information for alfalfa/tall fescue forage.

Silage quality was analyzed using wet chemistry techniques at the Cumberland Valley Forage Laboratory in Hagerstown, MD. Forage subsamples were dried, ground and analyzed for crude protein (CP), acid detergent fiber (ADF), neutral detergent fiber (NDF), and 30h digestible NDF (dNDF). Mixtures of true proteins, composed of amino acids, and non-protein nitrogen make up the CP content of forages. The CP content of forages is determined by measuring the amount of N and multiplying by 625. The bulky characteristics of forage come from fiber. Forage feeding values are negatively associated with fiber since the less digestible portions of plants are contained in the fiber fraction. The detergent fiber analysis system separates forages into two parts: cell contents, which include sugars, starches, protein, non-protein nitrogen, fats and other highly digestible compounds; and the less digestible components found in the fiber fraction. The total fiber content of forage is contained in the neutral detergent fiber (NDF). Chemically, this fraction includes cellulose, hemicellulose, and lignin. Because of these chemical components and their association with the bulkiness of feeds, NDF is closely related to feed intake and rumen fill in cows. Recently, forage testing laboratories have begun to evaluate forages for NDF digestibility. Evaluation of forages and other feedstuffs for NDF digestibility is being conducted to aid prediction of feed energy content and animal performance. Research has demonstrated that lactating dairy cows will eat more dry matter and produce more milk when fed forages with optimum NDF digestibility. Forages with increased NDF digestibility will result in higher energy values, and perhaps more importantly, increased forage intake. Forage NDF digestibility can range from 2080%.

The silage performance indices of milk per acre and milk per ton were calculated using a model derived from the

The levels of Net Energy Lactation (Mcal/lb) varied significantly between treatments. The treatment with the highest NEl was haylage with whole oats (HO) with 0.68 Mcal/lb. The treatment with the lowest NEl was haylage (H) with 0.64 Mcal/lb.



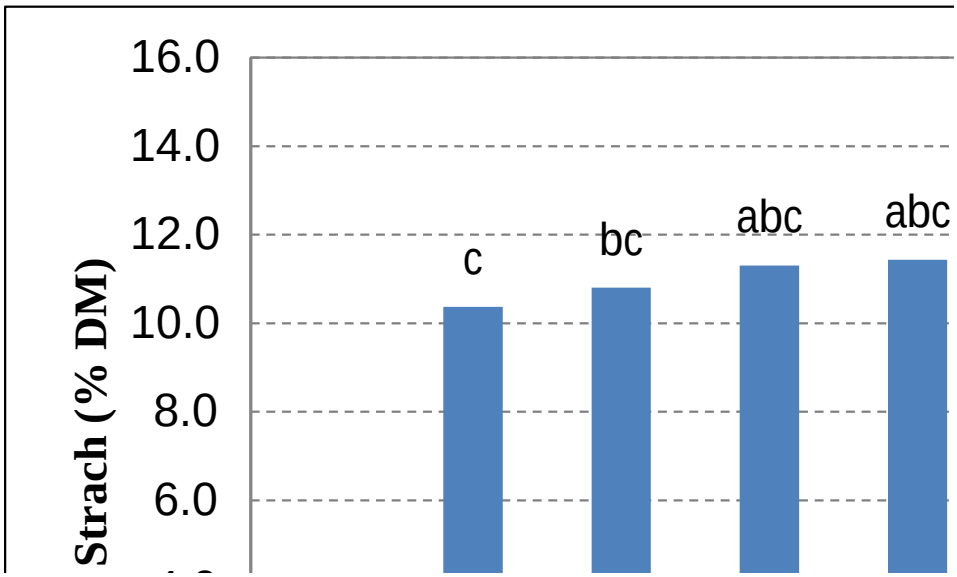


Figure 3. Starch of haylage and haylage mixed with processed grains fermented in a mini-silo.

HB was the highest in Nɵn

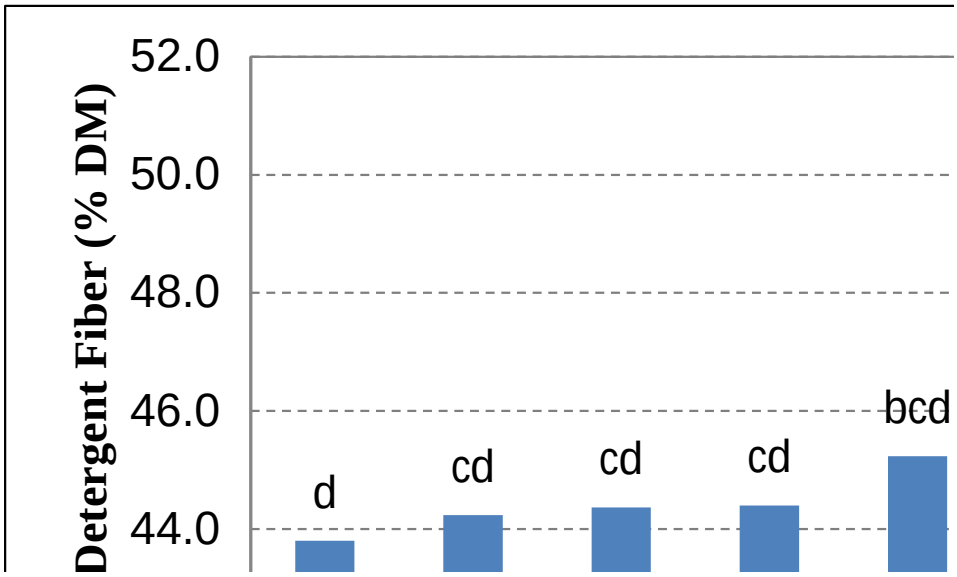


Figure 5.