Characteristics of Legume Silage Harvested in the Morning or Afternoon. (C06-owens111217-Poster)

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Abstract:

Degradation of protein during fermentation of high-protein crops reduces efficiency of dietary N utilization in ruminants. We have evaluated several environmental factors that might reduce the degree of proteolysis in the silo, including AM and PM harvest timing. Evidence suggests that enhanced levels of fermentable carbohydrates can reduce proteolysis by increasing acid production in the silo. Therefore, we harvested alfalfa (Medicago sativa L.) and red clover (Trifolium pratense L.) at 0600, 1000, 1400, and 1800 h to naturally vary carbohydrate levels. Forage was ensiled directly (unwilted silage) or wilted to about 350 g kg-1 before being ensiled (wilted silage). The level of TNC in fresh forage of both species increased throughout the day. Starch accounted for more than 50% of the daily change in TNC in fresh herbage of both species, in nearly all cases. Level of TNC at initiation of ensiling did not consistently affect protein degradation in either unwilted or wilted silage. Final starch concentrations were higher and pH levels lower in PM harvested forage, particularly in unwilted silage. We conclude that although the extent of proteolysis was largely unaffected by the level of TNC in forage entering the silo, lower silage pH and higher starch concentrations of silage from PM harvested forage may be better preserved and higher in quality.

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