Diurnal Effects on Alfalfa Forage Quality in Varied Agro-Climatic Zones in California. (C06-putnam184246-Oral)

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Abstract:

Many western state regions enjoy clear weather patterns, enabling flexibility in harvest timing. Alfalfa samples were collected at harvest at 2 hr diurnal increments in studies from 1992 through 1996 in alfalfa fields representing desert, Mediterranean, and intermountain growing regions. Fiber (ADF and NDF) and crude protein concentrations were affected by time of day in the majority of data sets. Differences were greater in samples dried immediately in an oven, vs. field-dried samples, where differences were smaller or non-existent. CP and fiber measurements were lower in afternoon samples compared with morning-harvested samples, indicating a higher potential TDN value for afternoon harvests, but lower CP concentrations. The UC Davis alfalfa growth model predicts 5 % diurnal changes in nonstructural carbohydrates at Davis during Julian day 98 and 192, which is consistent with these results. While differences are not consistent across environments, there is sufficient evidence for lower fiber concentrations in alfalfa during afternoon hours. This suggests use of afternoon harvests may be a helpful strategy to improve quality for cash-hay producers for some western US regions.

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