Modeling Silage Quality as a Function of Weather and Soil. (A03-wilson104839-Oral)

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Abstract:

A dairy forage assessment framework is presented to characterize the variability of silage quality related to climate variations during the crop-growing season. The framework was applied to current commercial corn hybrids devoted to silage production systems located in the dairy production region of U.S. The main objective was to evaluate the effects of weather on the quality value and relative maturity of corn silage and the relation of relative maturity to quality value. Quality value data used were obtained from a large number of field experiments conducted by Pioneer Hybrid, Inc, and implemented in geographically different dairy producing states of the U.S from 1998 to 2001. The main weather information used was daily series of precipitation and maximum and minimum air temperatures for each study site obtained from the NOAA-NCDC. After analyzing the variations in the datasets, quality values and relative maturity were correlated by multiple-regression to the weekly average values of different weather variables. These models suggest that region differences exist and weather variability can explain 40-60% of quality values.

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Presentation Information:

Presentation Date: Thursday, November 14, 2002
Presentation Time: 9:45 am

Keywords:

Silage quality, Dairy forage, Evapotranspiration, Soil-water balance