Bale Density and Moisture Effect on Alfalfa Round Bale Silage Quality. (C06-han125702-Oral)

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Abstract:

Round bale silage has lower capital investment costs than traditional silage systems. However, difficulty in achieving and maintaining anaerobic conditions reduces the long-term stability of baled silage. The effects of alfalfa moisture concentration at ensiling and bale density were evaluated in two field trials after 6 months of storage. Dry hay was prepared and stored under typical conditions for comparison. Lower (<500 g/kg) moisture silage had higher temperatures than higher (>500 g/kg) moisture silage during the initial weeks of storage. Silage stored for 6 months had pH values above 5.0 when moisture was below 500 g/kg. Higher moisture silage at lower bale densities (within the range of 288 to 501 kg per cubic meter) had higher levels of butyric acid. Silage in vitro dry matter disappearance (IVDMD) was closest to pre-storage levels when moisture at ensiling was above 500 g/kg. Hay declined 50 to 180 g/kg DM in IVDMD during the same storage period. These results indicate that forage quality loss during storage was greatest for dry hay and least for high-density alfalfa silage above 500 g/kg moisture.

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