

# Concentrations of Non Structural Carbohydrates in AM and PM-Cut Forage Species.

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Non structural carbohydrates are a source of readily fermentable energy for rumen microbes. We compared total non structural carbohydrates (TNC) concentration of eight forage species (six grasses and two legumes) cut at 0900 h in the morning (AM) or at 1530 h in the afternoon (PM) in the spring growth and summer regrowth of two harvest years. Starch was determined by colorimetry and other carbohydrates by high-performance liquid chromatography. The TNC concentration was estimated by the sum of sucrose, glucose, fructose, fructans (grasses) or pinitol (legumes), and starch. Red clover (*Trifolium pratense* L.) and tall fescue [*Lolium arundinaceum* (Schreb.) S.J. Darbyshire] had the greatest TNC concentration (average of 94 mg g<sup>-1</sup> DM for both spring growth and summer regrowth in both species) whereas reed canarygrass (*Phalaris arundinacea* L.) had the lowest TNC concentration (65.5 mg g<sup>-1</sup> DM). Concentration of TNC of all species increased with a delayed cutting during the day but the extent of this increase varied among forage species from 13% in smooth brome (*Bromus inermis* Leyss) to 68% in reed canarygrass.

**Implications:** Forage TNC concentration can be increased by choosing species such as tall fescue and red clover and by cutting the forage in the afternoon.