

Voluntary intake and digestibility of teff hay fed to horses

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The objective of this study was to evaluate nutrient composition, voluntary DMI, and apparent DM digestibility of teff hay cut at 3 different stages of maturity to evaluate its potential as a preserved forage for horses. Six mature Quarter Horse mares (12 ± 3 yr; 553 ± 39 kg of BW) were used in a replicated balanced Latin square design with 3 periods and 3 maturities of teff hay. *Eragrostis tef* ('Tiffany' teff) was planted in May and harvested at the boot, early-heading, or late-heading stage of maturity through the summer. Horses were acclimated to a mixture of maturities of teff hay for 8 d before the beginning of the study. After this acclimation period, each period consisted of a 9-d voluntary DMI phase, followed by a 3-d DM digestibility phase. The percentages of nonstructural carbohydrates (NSC) increased from 5.4% in the boot stage to 8.4% in the late-heading stage, whereas concentrations of CP, K, Fe, and Mn decreased. The Ca:P ratio was 2.0 ± 0.3 for all maturities. Horses had less DMI of late-heading teff hay (1.5% BW) than teff hay of other maturities (1.8% BW; $P < 0.05$), indicating a preference for the earlier maturities. The intake and nutrient composition of the boot and early-heading maturities was sufficient to meet 90 to 97% of the average DE of the horses and most other nutrient requirements. Digestibility decreased from boot to late-heading teff hay for DM, CP, ADF, and NDF ($P < 0.05$). Digestibility increased from boot to early-heading to late-heading hay for nonfiber carbohydrates and water-soluble carbohydrates ($P < 0.05$). For all maturities of teff hay, the NSC intake was below 10% of the total intake. In conclusion, the low NSC and DE of teff hay grown in central Pennsylvania under the conditions in this study make it an appropriate forage source for obese horses and those at risk for laminitis or other metabolic disorders.