

ASA, CSSA, and SSSA 2010 International Annual Meetings

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Green Revolution 2.0: Food+Energy and Environmental Security

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278-6 Energy Content of Tropical Grasses and Legumes Grown for Bioenergy.

Poster Number 803

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Wednesday, November 3, 2010

Long Beach Convention Center, Exhibit Hall BC, Lower Level

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Biomass samples of the tropical grasses *Brachiaria brizantha* (Hochst. ex A. Rich.) Staph, *Brachiaria humidicola* (Rendle) Schweick, *Brachiaria decumbens* Staph, *Panicum maximum* Jacq., *Pennisetum alopecuroides* (L.) Spreng and three species of the tropical legume *Stylosanthes* grown in Mato Grosso do Sul, Brazil, were analyzed for their total energy content using a bomb calorimeter. The grass samples varied in energy concentration from 15700 to 17140 J g⁻¹, a range of 9%. The *Stylosanthes* samples ranged from 16980 to 17430 J g⁻¹ in energy content. These results demonstrate that variation exists for biomass energy concentration among potential tropical perennial grass feedstocks harvested for use in combustion bioenergy conversion systems depending on maturity at harvest which affects leaf/stem ratios and degree of lignification and species and cultivars. Results also demonstrate that the biomass of the tropical legume *Stylosanthes* is fully equivalent in heat content to perennial tropical grasses.

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