

ABSTRACT

The yields and chemical composition of three pastures (1) local Guinea grass (Panicum maximum Jacq.), (2) Guinea grass-Centro (Centrosema pubescens CIAT 438) and (3) Guinea grass-Siratro (Macroptilium atropurpureum CIAT 4290) without and with phosphorus fertilizer (Triple Superphosphate) applied at the rate of 160kg/ha/annum were compared under a five-week harvesting regime following establishment for five consecutive harvests on River Estate sandy loam soil in Trinidad using a randomized complete block design. Grass height and plant population were observed. Legume nitrogen fixation and transfer were estimated. Following the final (fifth) harvest the daily dry matter intake of heifer calves from the pastures were compared.

The dry matter yield of the Guinea grass-Siratro pasture gave the highest ($P>0.05$) response to phosphorus fertilization throughout the study. The dry matter yield of the Guinea grass pasture responded ($P>0.05$) to phosphorus fertilization only at the first harvest.

In either of the three pastures, phosphorus fertilization generally increased the phosphorus concentration in the tissue. Except for Guinea grass-Centro, phosphorus fertilization increased the nitrogen concentrations of the pastures. Phosphorus fertilization did not affect ($P>0.05$) the acid-detergent fibre content of either sward.

The response of crude protein/nitrogen yield to phosphorus fertilization was highest in Guinea grass-Siratro pasture and lowest in Guinea grass-Centro pasture. Guinea grass-Siratro was the only sward in which phosphorus fertilization increased phosphorus yield throughout the study,

Guinea grass in association with Siratro showed the highest ($P < 0.05$) growth in height at the fifth harvest. Grass produced less ($P < 0.05$) tillers when associated with the legumes,

The estimated values of nitrogen fixation and transfer were higher in Guinea grass-Siratro pasture with phosphorus fertilization than in Guinea grass-Centro pasture similarly Mr. I. fertilized, highly acknowledged. Profound appreciation is expressed

The estimated daily dry matter intake of heifer calves was higher on the Guinea grass-legume pastures than on the Guinea grass pasture, and the dry matter intake increased during the grazing study only on Guinea grass-Siratro pasture with phosphorus fertilization. Center, U.W.I., in analysing the data,

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