

Summary

The effects of applying inorganic and organic fertilizers on the dry matter production and chemical composition of *Panicum maximum* cv. Tobiata were evaluated at the Terra Alta experiment station of Embrapa-Amazônia Oriental, located in northeastern Pará, Brazil (36 masl; 0° 43' S and 47° 5' W). The trial was conducted on a medium-textured yellow Latosol (Oxisol) from April 1995 to May 1997. A randomized block design with four replications was used. Treatments (T) were as follows: T₁, control; T₂, organic fertilizer (OF), T₃, OF + phosphorus (P); T₄, OF + potassium (K); T₅, OF + nitrogen (N); T₆, OF + P + N; T₇, OF + N + K; T₈, OF + P + K; T₉, OF + N + P + K; and T₁₀, OF (50 t/ha). Application of inorganic fertilizer consisted of 100 kg/ha of N, 125 kg/ha of P₂O₅ and 125 kg/ha of K. Organic fertilizer corresponded to 30 t/ha, except for T₁ (no fertilization) and T₁₀ (50 t/ha). Dolomitic lime was applied at 2 t/ha to correct soil acidity. Results showed that the application of N and especially P significantly increased dry matter production of *P. maximum* cv. Tobiata. However, there was no significant response to K application. Organic fertilization (manure) was efficient in increasing dry matter production and quality of *P. maximum* cv. Tobiata, but only when P and N were applied. K levels were above minimum requirements only in dairy cows, indicating the need to supplement with a mixture containing CP, Ca, and P. However, in the case of growing calves, CP levels were above minimum requirements, mainly in treatments with N. P levels, on the other hand, were only appropriate in the complete treatment. Ca levels were only deficient in the check treatment.