

Summary

The critical internal levels of phosphorus (P) of *Panicum maximum* cv. Colonião, Tobiata, and Tanzânia-1 were determined under greenhouse conditions at the Eastern Amazonian Agroforestry Research Center (CPATU, its acronym in Portuguese) in Belem, Brazil. Plants were grown in an Oxisol with pH 5.5, 2.6 ppm P (Mehlich), and 3.43, 0.89 and 0.26 cmol/kg of Ca, Mg and K, respectively. At planting, P was applied at 6, 12, 24, 48, and 96 ppm, in addition to 50, 25, 10, 2, 1, 0.5 and 0.2 ppm of N, K, S, Zn, Cu, B and Mo, respectively. Treatments were arranged in randomized blocks, with three replicates. The relationship between P rates applied and P concentration in plant tissues, and DM production, 35 days after transplanting the seedling, were submitted to regression analysis.

Critical internal levels of P for *P. maximum* cultivars Colonião, Tobiata, and Tanzânia-1 were, respectively, 0.198%, 0.224% and 0.214%, corresponding to 36.3, 32.1, and 31.3 ppm P. At these levels, the relative DM yields (90%) for these same cultivars were 24.3, 21.9, and 23.7 g/pot.