

Summary

This trial was to study the effect of two sources of phosphorus (P) —triple superphosphate (TSP) and North Carolina phosphate (NC-P), a natural source— and five application levels (0, 22, 44, 66, and 88 kg/ha of P; 0, 50, 100, 150, and 200 kg/ha of P_2O_5) on the establishment and productivity of *Brachiaria brizantha* cv. Marandú in a Yellow Latossol at EMBRAPA's Experiment Station at Terra Alta do Pará, Brazil. The climate is Ami type —average annual rainfall of 2000 mm; temperature of 26 °C; and humidity of 76%. The experimental design was randomized blocks with three replicates. Plots were cut five times, at 45-day intervals, and at 10 cm above the ground. For both P sources, forage production increased with P level up to 44 kg/ha. Economic application levels of P were 38 and 36 kg/ha of TSP and NC-P, which cost US\$0.04 and US\$0.03, respectively, to produce 1 kg of live weight gain. The cost of 1 kg of P_2O_5 was US\$0.64 and US\$0.50 for TSP and NC-P, respectively.