

Summary

The effects of an allic Cambisol on the growth and dry matter (DM) production of *Brachiaria brizantha* cv. Marandú and *Andropogon gayanus* cv. Planaltina were studied in greenhouse conditions at the Soil Science Department of the Federal University of Lavras. The soil, collected in the region of Campos da Mantiqueira in Minas Gerais, Brazil, had a pH of 4.9 and contained 4% OM, 1 ppm P, 25 ppm K, and 0.3, 0.1, 0.7, and 5.6 meq/100 cm³ of Ca, Mg, Al, and H + Al, respectively.

Treatments were: (1) check (C) = natural soil; (2) complete (C1) = liming + N, P, K, S, B, Cu, and Zn; (3) complete (C2) = C1 - liming + Ca and Mg in form of sulfate; (4) C1 - liming (-lime); (5) C1 - N (-N); (6) C1 - P (-P); (7) C1 - K (-K); (8) C1 - S (-S); (9) C1 - B, Cu, and Zn (-micro); (10) C2 - Ca (-Ca); (11) C2 - Mg (-Mg).

Application rates of nutrients (mg/kg) applied at planting were N = 80, P = 200, K = 150, Ca = 75, S = 50, B = 0.5, Cu = 1.5, and Zn = 5. During the growth period of the grasses, N was applied three times at a rate of 30 mg/kg and K at 20 mg/kg. After germination, three plants were left per pot, and moisture was maintained at 60% saturation. Grasses were cut at 118 days (*brachiaria*), 138 (*andropogon*), and 208 days (both) after planting. A completely randomized experiment design, with 11 treatments and three replicates, was used.

Results showed significant reductions in DM production (%) of *B. brizantha*, as compared to the complete treatment (C1) with the treatments: -N (20%); -P (5%); and -K (45%). In the case of *A. gayanus*, these same reductions were 32% for -N and 1% for -P. For *B. brizantha*, as of the second cutting, K, Ca, and S were also found to be limiting nutrients. *B. brizantha*, with its quick establishment and DM production, shows great potential for the region of Campos da Mantiquiera, MG, Brasil.