

Summary

A greenhouse experiment was carried out in Lavras, Mato Grosso, Brazil, to evaluate the response of *Andropogon gayanus*, *Stylosanthes guianensis*, and *A. gayanus* + *S. guianensis* to mycorrhizal inoculation and application of different doses of phosphate fertilizer. Plants were cultivated in pots with 3.8 kg of a Dystrophic Dark-Red Latosol from Campos das Vertentes (MG). The experimental design was randomized complete block in a 3 × 5 factorial scheme with four replicates. Treatments were variations in mycorrhizal inoculation (natural soil, soil without mycorrhizae, and soil inoculated with *Glomus etunicatum*). Phosphorus was applied at 0, 50, 100, 200, and 300 mg P/kg of soil. Plant aerial parts were cut twice. Dry matter (DM) production and total crude protein (CP) content of the cut forage were analyzed. Results showed that increasing P rates significantly increased DM production and accumulation of CP, P, Ca, K, and Mg in the plant's aerial parts. These results indicated that the impact of mycorrhizal fungi depended on the forage species being studied, and was greatest when P rates were intermediate.