

Summary

A greenhouse experiment was carried out at the University of Lavras, Mato Grosso, Brazil, to evaluate the response of *Andropogon gayanus* and *Stylosanthes guianensis* to mycorrhizal inoculation and application of different doses of P, under drought. 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 x 5 factorial scheme with four replicates. Treatments, which totaled 15, 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 three times. The third cut was made after the plants were submitted to a period of drought. Shoot and root development was evaluated. Results showed that increasing P rates significantly increased DM production and improved the plants' drought tolerance. These results indicated that the impact of mycorrhizal fungi depended, to a larger or smaller extent, on the forage species being studied, being more significant in *Stylosanthes guianensis*, and was greatest when P rates were intermediate.