Summary

A study was carried out at the Agua Limpa Experimental Farm, located in the savannas of Brazil's Federal District, to study the effects of annual and biannual burning on different characteristics of the native grass species *Echynolaena inflexa* (Poiret) Chase, *Trachypogon filifolius* (Hach) Hitchc., *Schyzachyrium tenerum* Nees, and *Axonopus barbigerus* (Kunth) Hitchc. Characteristics studied were the dynamics of green tissue, expansion and senescence of lamina leaves. The study area included a Petric Plintsoil, a yellow-red Latosol, and a dark yellow-red Latosol. For each soil type, five plants that did not show signs of senescence were randomly selected for each species. Measurements of leaf extension and proportion of green and dead leafs were made at 4-week intervals. Regression and multivariate analyses were used to compare the proportion of live and dead tissue among the different species and soil types. The results show that leaf blade elongation of species increased during the wet summer months and decreased during the dry winter ones. This sequence followed the precipitation curve, regardless of soil type or frequency of burning. Leaf blade senescence increased with decreasing precipitation and temperature. The quantity of green tissue followed the precipitation curve for the region. *Axonopus barbigerus* and *T. filifolius* presented greater leaf elongation and lower leaf senescence in all soil types. *Echynolaena inflexa* and *S. tenerum* presented lower leaf blade elongation and senescence, regardless of soil type or frequency of burning, suggesting that management strategies should be used to preserve or increase these two grass species in native pastures in the savanna region.