

Summary

Between December 1996 and February 1998, the effect of plant age at cutting (21, 28, 35, and 42 days) on DM production, regrowth vigor (RV), removal of apical meristems (RAM), leaf growth rate (LGR), absolute growth rate (AGR), relative growth rate (RGR), and leaf area index (LAI) of *Brachiaria humidicola* cv. Común, BRA-3564, and BRA-3545 was evaluated in a yellow Latosol at the experimental field of the Brazilian Agricultural Research Enterprise (Embrapa) in Rondônia (Porto Velho, Brazil), located 96.3 m above sea level, 8° 46' S latitude and 63° 5' W longitude. Dry matter production and AGR increased with plant age, whereas RGR and LGR decreased. The percentage of RAM increased with plant age. Regrowth correlated negatively with survival of apical meristems. Regardless of plant age, *B. humidicola* BRA 3545 presented the highest values of DM production, rate of regrowth, and LAI. Results suggest that the best age for cutting this genotype and *B. humidicola* BRA 3564 is between 28 and 35 days, while for *B. humidicola* cv. Común, it should be between 35 and 42 days.