

# Summary

Between October 1996 and April 1998, the agronomic performance of seven forage grass species was evaluated in a yellow Latosol at the experimental field of the Brazilian Agricultural Research Enterprise (Embrapa) in Rondônia (Porto Velho, Brazil), located 96 m above sea level, 8° 46' S latitude and 63° 5' W longitude). Grass species evaluated were *Brachiaria brizantha* cv. Marandu, *B. humidicola*, *Paspalum atratum* BRA-9610, *P. guenoarum* BRA-3824, *P. regnelli* BRA-0159, *P. plicatulum* BRA-9661, and *Hemarthria altissima*. During the rainy season, the highest DM production was reached with *B. brizantha* (3.7 t/ha), *P. atratum* BRA-9610 (1.98 t/ha), and *B. humidicola* (1.7 t/ha). During the dry season, the highest DM production was obtained with *B. brizantha* (1.66 t/ha) and *P. atratum* BRA-9610 (1.48 t/ha). During the first season, higher N and P concentrations (g/kg) were found in *P. regnelli* BRA-0159 (17.2 and 0.98),

*P. guenoarum* BRA-3824 (13.4 and 1.32), and *B. humidicola* (13.2 and 1.28), whereas highest Ca concentrations were found in *P. atratum* BRA-9610 (5.6) and *B. humidicola* (6.3). During the second season, *P. regnelli* BRA-0159 presented a higher N concentration (19.3) and *B. humidicola* and *B. brizantha* the highest P (1.67 and 1.54) and Ca concentrations (6.9 and 6.1), respectively.