

Summary

A grazing experiment was conducted in 1985 at the ICA-CIAT Carimagua research station in the Colombian eastern plains to measure seasonal quality and voluntary intake of native grasses managed with burning and two stocking rates (0.375 and 0.750 an/ha) in a well-drained savanna site. The savanna was burnt in each paddock, in a sequential manner, in December (beginning of the dry season), March (end of the dry season), and September (rainy season). Measurements of quality of the forage on offer and selected by esophageal-fistulated steers as well as voluntary intake and grazing behavior were performed every two months during the dry and wet seasons.

The results showed that crude protein (CP) and in vitro dry matter digestibility (IVDMD) of the forage on offer and selected were not affected by stocking rate. Expected variations resulting from burning, in the quality of forage on offer were confounded by the season of the year. The CP in the leaves of available forage increased at the beginning of the rainy season but dropped to levels of 5% towards the end of the rainy season, regardless of the date of burning. In contrast, IVDMD of the forage on offer was less in the wet season than in the dry season.

In the forage selected by animals, the CP and IVDMD were greater than the corresponding values in the available forage. Levels of CP in the forage selected were 7% or greater throughout the year. In contrast, IVDMD values in the diet selected were low (34%-39%), particularly during the dry season. In spite of low forage availability, both permanent and fistulated animals spent 50% or more of their grazing time in areas recently burnt.

Voluntary intake of organic matter (OM) was not affected by stocking rate, but did vary between seasons, being greater in the rainy season (2.2 kg of OM/100 kg of body weight) than in the dry season (1.4 kg of OM/100 kg b.w.). Liveweight gain per animal was not correlated with CP of the forage selected ($r = 0.32$), but was highly correlated with IVDMD of the diet selected ($r = 0.92^{**}$) and with intake of digestible nutrients ($r = 0.88^{**}$). On the other hand, intake of digestible nutrients was related to availability of digestible green dry matter.

From the results of this study, it is concluded that low digestibility of the forage available and selected by grazing animals throughout the year is a nutritional factor that limits animal performance on well-drained savannas managed with fire. Specifically, low forage digestibility, together with limited forage availability in burnt areas where cattle prefer to graze, results in low intake of digestible nutrients and, consequently, poor animal performance.