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III.17 Effect of slash-and-mulch on productivity of grass-only and grass–legume pastures in northeastern Pará, Brazil

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The slash-and-burn of secondary vegetation (“capoeira”) is a common practice of establishing pasture in traditional smallholder production systems in northeastern Brazil, state of Pará. Nutrient losses and accidental fires are the most common environmental problems associated with this practice. This study compares two methods of land preparation (slash-and-burn and slash-and-mulch) on the establishment and productivity of “quicuío” (*Brachiaria humidicola*) and “braquiaraço” (*B. brizantha*) pasture, pure and in mixture with two legumes combinations (*Leucaena leucocephala* + *Arachis pintoii* and *Cratylia argentea* + *Arachis pintoii*). The experiment is being carried out on a smallholder farm in Igarapé-Açu (sandy Yellow Latossolo soil; Ami climate) since March 2001. The mulch was obtained by triturating a 8-year old “capoeira” vegetation and spreading it over the area. Only the legume *Cratylia argentea* will be planted by seedlings. The experimental design is a completely randomized block, with three replications, each plot measuring around 0.3 ha (53 m x 50 m). The legume combinations were established in 4 m rows in a distance of 8 m. During planting phosphorus fertilizer (60 kg P₂O₅ ha⁻¹) was applied on all plots. Three steers will be assigned to each treatment and grazed in a rotational system (21-day grazing / 42-day rest), using the replications as paddocks. The experiment is in its establishment phase. It is planned to measure the dynamics of the mulch layer, soil properties (OM, chemical and physical parameters) and of the botanical composition comparing the treatments for at least three years. The main experimental responses will be: forage production and quality and animal gains (per head and per area).