

Performance of Nelore steers grazing pure and mixed pastures in Acre

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The tropical forage legume *Arachis pintoii* has been successfully used in mixed pastures in the State of Acre during the last fifteen years. Despite its excellent agronomic performance, with high persistence and compatibility with several grasses, the animal performance in mixed pastures with this legume had never been evaluated in the region. This study aimed to evaluate the performance of Nelore steers managed under continuous stocking in pure *Brachiaria humidicola* pastures or mixed with *Arachis pintoii* cv. Mandobi. The experiment was carried out in a private farm in the State of Acre, from October 2012 to April 2013. A pure *B. humidicola* pasture was compared with a *B. humidicola* pasture where *A. pintoii* cv. Mandobi was introduced during the last two years, reaching around 10% of botanical composition at the onset of the experiment. Each experimental unit was a paddock with 1.4 ha, in a completely randomized design, with three replications. Six Nelore steers were used as tester animals and additional steers (regulators) were placed or removed from each paddock according with the pasture height target of 15 cm. Pastures were sampled every 15 days by cutting an area enclosed by a 0.25 m² metallic quadrat in eight sites per paddock. Pasture height was measured with a metal ruler with 0.50 m length at three points inside the quadrat. Animals were weighed every 28 days after a fasting period of fourteen hours to determine the average daily gain (ADG; g animal day⁻¹). Carrying capacity (AU/ha) was calculated according to the mean weight and number of animals.days⁻¹ in each experimental unit. Animal productivity (kg ha⁻¹ of liveweight) was calculated based on animal daily gain and the number of animals.day⁻¹ in each experimental unit. The total weight gain (TWG) was determined by the difference between the initial and final body weight and ADG was calculated by dividing the total weight gain for days on experiment. Data were analyzed according to a randomized design. The least square means were compared using Fisher's protected LSD. The carrying capacity during this rainy season was 3.97 AU ha⁻¹ in the pure and 3.97 AU ha⁻¹ in the mixed pasture (P=0.9900). Animal daily gain was 20% higher (P=0.0611) for the mixed pasture, with mean values ranging from 0.419 kg animal⁻¹ day⁻¹ in pure pasture to 0.503 kg animal⁻¹ day⁻¹ in the mixed pasture. The animal productivity was increased 20.5% (P=0.1118) by the use of *A. pintoii* cv. Mandobi (399 kg ha⁻¹ vs. 481 kg ha⁻¹), as a result of its effect on both carrying capacity and animal performance. *A. pintoii* is a high palatable and nutritive forage legume. This study shows that only 10% of this legume in mixed pastures with *Brachiaria humidicola* can affect positively the animal productivity.

Keywords: *Arachis pintoii*, *Brachiaria humidicola*, legume, Mandobi

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