

Response of *Arachis pinto* to grazing intensity when associated with different grasses

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Introduction Lack of legume persistence is one of the main reasons for poor utilisation of grass-legume pastures in the tropics. *Arachis pinto* (forage peanut) is currently the most promising forage legume for the humid tropics, mainly because of good persistence under grazing (Grof, 1985; Fisher & Cruz, 1995). The objective of this work was to show how two accessions of *A. pinto* react to increasing herbage allowance levels when associated with two different grasses.

Materials and methods Two grazing experiments were carried out at the Experimental Station of Embrapa Acre (10°01'59"S and 67°42'13"W), in Rio Branco, AC, Brazil. In experiment 1, a nine-year-old *Panicum maximum* cv. Massai and *A. pinto* Ac 01 pasture was grazed at three herbage allowance (HA) levels (9.0, 14.5 and 18.4% body weight (BW)), from October 2002 to December 2003. In experiment 2, a three-year-old *Brachiaria brizantha* cv. Marandu and *A. pinto* Ap 65 pasture was grazed at four HA levels (6.6, 10.3, 14.3 and 17.9%BW), from January to December 2003. Pastures were rotationally stocked and botanical composition was measured pre-grazing in each grazing cycle. Only results for the final grazing cycle are presented.

Results Initial average forage peanut percentages (FP%) were 5% and 4% when associated with Massai grass and Marandu grass, respectively. These low FP% can be explained since both pastures were under-utilised at the onset of the experimental periods. Final FP% increased linearly as HA was reduced, in both experiments (Figure 1), confirming that *A. pinto* is favoured when managed under higher grazing intensities, as demonstrated previously for cultivars Amarillo (Fisher & Cruz, 1995; Ibrahim & Mannetje, 1998) and Belmonte (Santana *et al.*, 1998). In contrast to prostrate legumes like *Desmodium ovalifolium*, whose high grazing resistance is due to avoidance because of low palatability, *A. pinto* is a palatable legume (Lascano, 2000). Its prostrate and stoloniferous growth habit, with growing points protected from grazing, explains the high grazing resistance. Therefore, the increase of FP% with low HA was not related to selectivity, but primarily to sward structure modification.

Conclusions The results of the present study demonstrate that *A. pinto* can be successfully associated with Massai grass or Marandu grass under rotational stocking in the Western Brazilian Amazon, but to obtain a significant legume content swards should be grazed sufficiently hard to avoid excessive shading of the legume.

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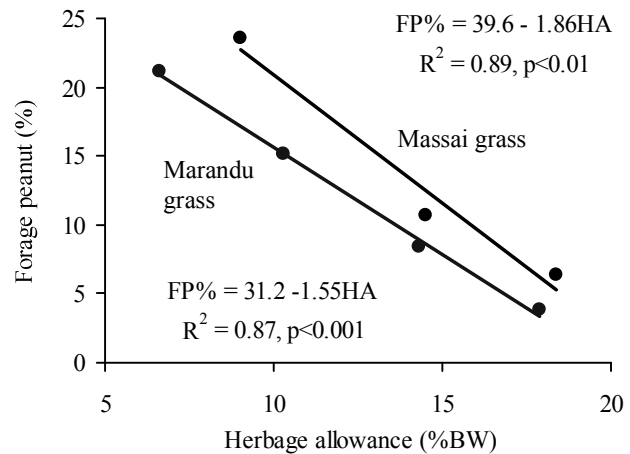


Figure 1 Effect of herbage allowance on forage peanut percentage