

Direct sowing of *Brachiaria brizantha* for pasture renovation in the Amazon biome

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No-tillage systems are nowadays largely used in Brazilian agriculture, due to its numerous benefits when compared with traditional tillage systems. However, this technique has been little used in livestock systems for pasture renovation. The development of this technique has a great potential to assist small farmers to reclaim its degraded pastures with less investment and reduced environmental impact. The objective of this work was to define the best rate and time of direct sowing of *Brachiaria brizantha* cv. Xaraés in a no-till strategy of pasture renovation. The experiment was carried out from October 2012 to February 2013, in a degraded pasture area in Rio Branco, State of Acre, Brazil. The experimental design was a randomized block with four replications and treatments arranged in a 4x3 factorial design, with four sowing rates of *B. brizantha* cv. Xaraés (4, 8, 16 and 32 kg ha⁻¹ of pure germinable seeds) and three sowing dates (1, 14 and 28 days after desiccation), using plots with 3 m x 4 m. The desiccation of the existing vegetation was obtained by spraying a mixture of glyphosate and 2,4-D herbicides. Establishment fertilization was calculated according the soil testing and 150 kg ha⁻¹ of reactive rock phosphate was manually broadcast at each sowing date. The grass seeds were manually spread over the top of desiccated degraded pasture. Broadleaf weeds were controlled by spraying 1.5 L ha⁻¹ of commercial 2,4-D herbicide at 45 days after sowing. Initial stand of cv. Xaraés, broadleaf and narrowleaf weeds were evaluated at 28 days after sowing. Botanical composition, pasture height and dry weight of pasture components (cv. Xaraés, broadleaf and narrowleaf weeds) were evaluated at 98 days after sowing. Data were analyzed according to a randomized block design, in a factorial design. No significant interactions ($P>0.05$) were found, so least square means of sowing dates were compared using Fisher's protected LSD ($P<0.05$) and data of sowing rates were submitted to linear regression analysis. Sowing one day after desiccation had very bad results, with initial stand of only 0.25 seedlings per m² of cv. Xaraés at 28 days after sowing. Probably a significant portion of the seeds was killed by the residue of the herbicide glyphosate applied the previous day. The initial stand of cv. Xaraés was similar ($P>0.05$) when sown at 14 or 28 days after desiccation (average of 8.5 seedling per m²), but sowing at 14 days after desiccation resulted in a pasture with higher ($P<0.05$) percentage of cv. Xaraés and lower percentage of weeds at 98 days after sowing. The stand of cv. Xaraés at 28 days after sowing increased linearly ($P<0.05$) with increasing seeding rate, averaging 8.7 seedlings per m² for the higher rate, but seeding rate of cv. Xaraés had no effect ($P>0.05$) on the initial stand of weeds. The use of higher seeding rates also resulted in a linear increase ($P<0.05$) in the total pasture dry mass, dry weight and percentage of cv. Xaraés at 98 days after sowing. The opposite occurred for the percentage of broadleaf and narrowleaf weeds, and the dry mass of narrowleaf weeds, which decreased with the use of higher seeding rates. Pasture height at 98 days after sowing increased ($P<0.05$) according to a quadratic model with increasing sowing rates of cv. Xaraés, with a slight reduction in pasture height at 32 kg ha⁻¹ of pure germinable seeds (PGS) due to plant lodging of cv. Xaraés. The best seeding date for direct sowing of cv. Xaraés in pasture renovation is 14 days after desiccation. A minimum of 8 kg ha⁻¹ of PGS of cv. Xaraés is required for a satisfactory pasture establishment in the Amazon biome.

Keywords: no-till, overseeding, seeding methods.

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