

Consortium corn-teak in crop-livestock-forest integration system in the state of Roraima

Roberto D. MEDEIROS*¹, Edgley S. SILVA², Ignácio L.G.S. CARMO², João L.L. MONTEIRO NETO², Luciana B. TRASSATO², Alexandre P. SILVA³, Emilia E.V. MORINIGO².

¹ Embrapa Roraima, BR 174, Km 8, Boa Vista, 69301-970, RR, Brazil; ² POSAGRO-UFRR, Boa Vista, 69.310-270, RR, Brazil; ³ Graduating in agronomy CCA/UFRR, Boa Vista, 69.310-270, RR, Brazil.

E-mail address of the presenting author *: roberto.medeiros@embrapa.br

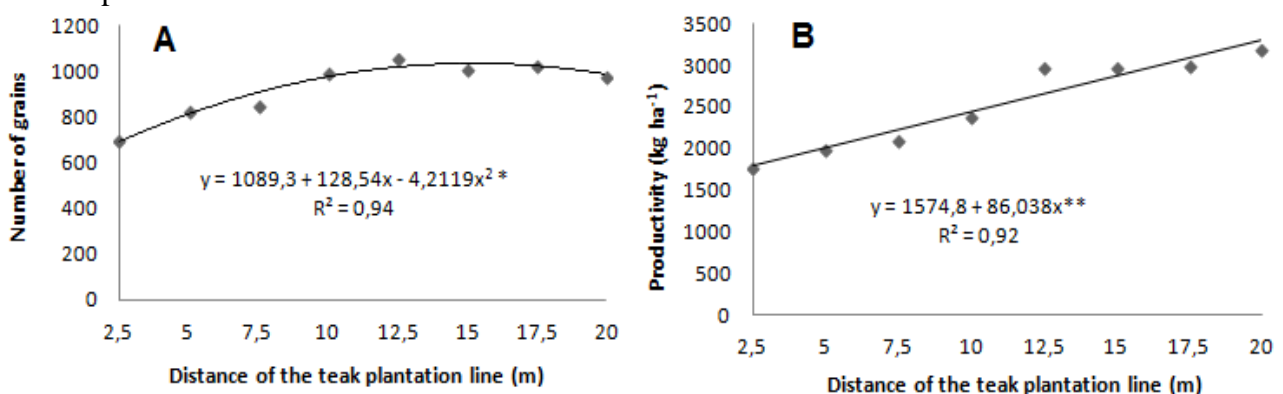
Introduction The crop-livestock-forest (iLPF) appears as a sustainable production strategy that integrates agricultural, livestock and forestry, held in the same area, in consortium, succession or rotation. Different cultures can compose iLPF systems among which stands out the corn. As one of the most important grasses for commercial cultivation and provide a significant amount of straw and organic matter (Silva et al., 2009). In this presentation we report the corn production results in consortium with teak in crop-livestock-forest integration system in the state of Roraima.

Material and methods

The experiment was conducted in the agricultural year 2014, in savannah-forest transition area, in the field Serra da Prata belonging to Embrapa Roraima located in the municipality of Mucajaí-RR in the geographical coordinates 60°58'40" W and 02°23'49,5" N. The experimental design was a randomized block with four replications, the treatments consisted of eight corn sowing tracks (2.5 m, 5.0 m, 7.5 m, 10.0 m, 12.5 m, 15.0 m, 17.5 m and 20.0 m) distanced from the teak plantation line (*Tectona grandis*). Forest animals aged six years planted in seven rows of 3m x 2m. The corn seeding was carried out in the form of tillage on the *Brachiaria ruziziensis* straw previously desiccated. Data were subjected to analysis of variance, determining the significance through the F test at 5% probability, when observed effect of treatments, proceeded to polynomial regression analysis.

Results and conclusions

Fig. 1. Number of grains per cobs (A) and productivity (B) of corn as a function of distance from the teak plantation line.



It shows a quadratic response to the number of grains per spike, where the best average were observed with 12.5 m (1057.6 grains), from that point there is a reduction concurrently with the distance the planting line (Fig. 1A). For productivity observed a linear increase with the distance of the teak plantation line with a maximum average of 3178.7 kg ha⁻¹ in 20 m (Fig. 1B). These results seem to indicate a strong competition for water, nutrients, and mainly for light, exerted by the teak on the corn crop. In this context corn yield cultivated in consortium with teak is influenced by the distance from the plant line.

Reference cited

Silva et al. (2009) Acta Sci. Agro. v. 31, p. 275-281.