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Relationship between the light intensity and the distance from eucalyptus strips in pasture

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Introduction

The recovery of degraded pastures can be done by integrated crop-livestock-forest systems (CLFS). Improving ambience for livestock without economically affecting production in this kind of system depends on orientation, length and surface area of shades projected by trees. Therefore, this study aimed to evaluate the shading of eucalyptus strips in the pasture.

Material and Methods

The experiment was conducted in the southwest of the Amazon, Porto Velho – Rondônia (Embrapa Rondônia). The experimental area is composed to 7 strips of 250 m long, with 4 rows of eucalyptus each with an average height 13 m. Distances between strips ranging 18-42 m, with the presence of pasture. For illuminance measurement is used a portable luximeter sensor, traversal being done in the morning and afternoon, lines perpendicular to strips, at points 30 meters equidistant from one another (in the direction of the rows length). Illuminance was raised one point at the center of each strip and 10 in pasture areas, corresponding one point to every tenth of the distance between two strips, totaling 61 points per transept and 1,342 points across the area. The relationship between variables was analyzed by Pearson correlation coefficient.

Results and Conclusions

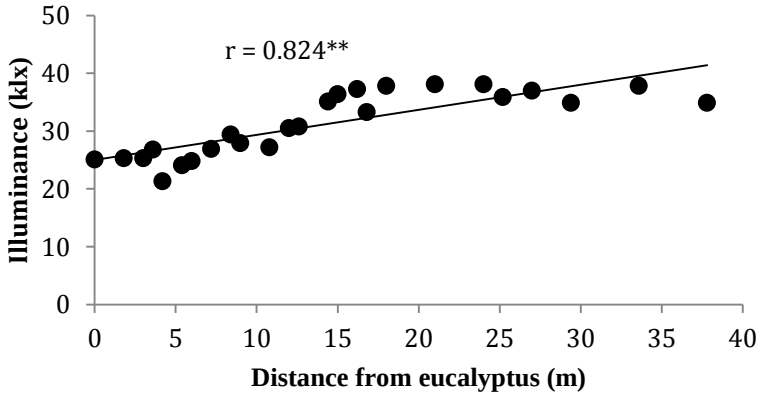

Figure 1. Correlation between the distance from eucalyptus strips and the illuminance on grassland. klx = 1,000 lux. ** Significant at the 1% level of significance.

There was a positive correlation between the distance from strips and the illuminance, showing that the closer the eucalyptus strips the lower the light intensity. So, the average illuminance under strips was 25.1 klx while on pasture the average was 31.5 klx. It concludes that the eucalyptus reduce the illuminance in pasture under strips by 25.5%. Further analyzes should be made to quantify this reduction and its effect on the development of pasture.