

Air temperature variation in an agroforestry system

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Introduction

There is little information on air temperature in agroforestry systems compared to absence of trees. The temperature can affect plant growth and development, soil attributes and the animal welfare (Colambari et al., 2010). In the present work, we report the temperature fluctuation between rows of *Eucalyptus grandis* compared to the temperature in absence of trees.

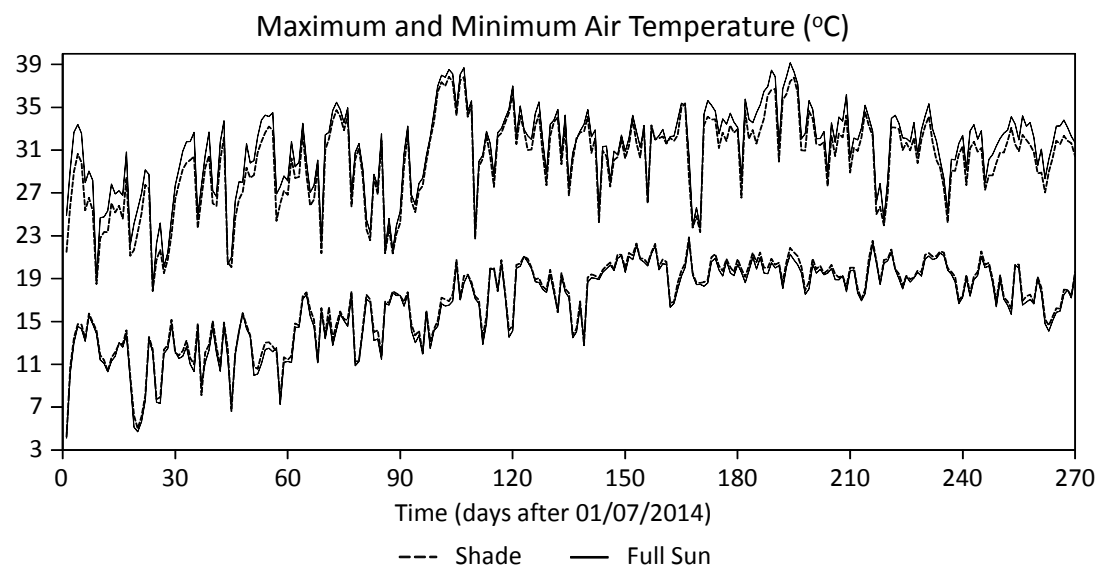
Material and Methods

The field work was carried out in Londrina, Paraná State, southern Brazil (23°48'S; 50°98'W; altitude 500 m) during the 2014/2015 soybean cropping season, from July and March. The daily maximum and minimum air temperature were measured in between single rows of five years old *E. grandis*, spaced 20 m (shade) and compared with air temperatures in absence of trees (full sun).

Results and Conclusion

The largest differences were found between the extreme maximum air temperatures. In the absence of trees the average of extreme maximum air temperature was 1.3 °C hotter than in between tree ranks (Fig 1.). The maximum air temperatures were recorded in October, 2014 and in January, 2015. The extreme minimum temperatures were less affected by the presence of the ranks of trees. The average of the extreme minimum air temperatures in absence of trees was 0.3 °C cooler than in between tree ranks (Fig. 1). Our results indicate that the presence of trees alleviates temperature effects in agroforestry systems.

Fig. 1. Maximum and minimum air temperatures between single rows of *Eucalyptus grandis* (shade) and in absence of trees (full sun). Londrina, PR, Brazil




References cited

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