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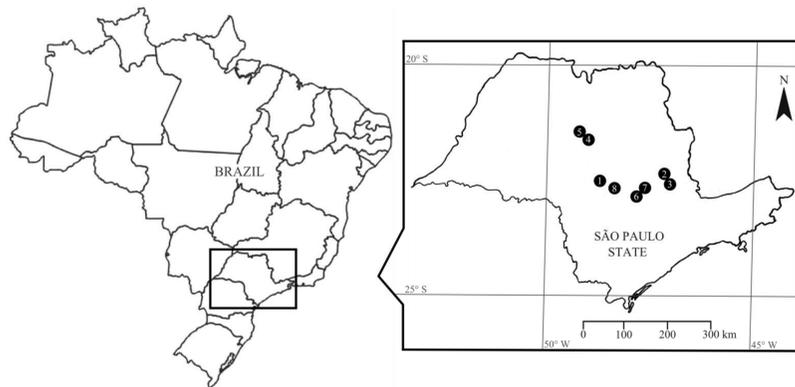
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## Introduction

Sugarcane is an important energy crop in Brazil. Since soil microbial biomass serves as plant nutrient pool due to its high lability, monitoring microbiological soil parameters seems reasonable to identify changes promoted by soil management. This study aimed to evaluate microbiological parameters in sugarcane cropped soils.

## Material and methods



**Figure 1.** Soil sampling in eight N-response sugarcane experimental sites at 0-20 and 20-40 cm soil layer.

Incubation of fresh soil samples for 10 d at 25°C

Microbial biomass C (MB-C) measured by CFE

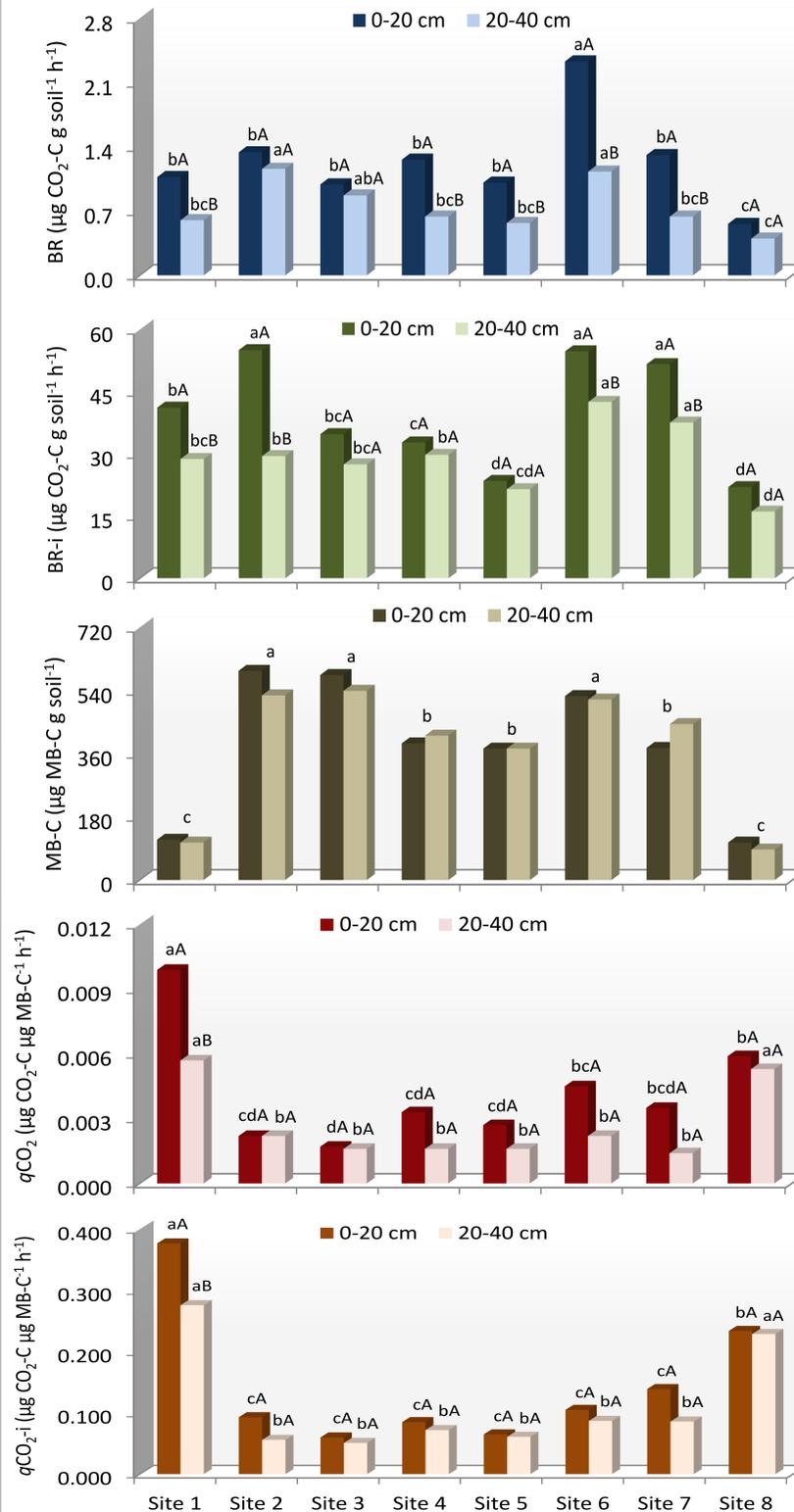
Basal respiration (BR) estimated in non-fumigated soil samples during the incubation period

Induced basal respiration (BR-i) obtained by glucose addition (0.5%) and further incubation for additional 3 d

Metabolic quotient ( $qCO_2$ ) and induced metabolic quotient ( $qCO_2-i$ )

LSD t-test ( $p < 0.05$ ) and Pearson's correlation ( $p < 0.01$ )

## Results



The soils differed greatly in relation to MB-C content. On average, BR enhanced by 35 times with glucose addition. Sites 1 and 8 showed higher  $qCO_2$  and  $qCO_2-i$  values possible due to the recent soil tillage practices (site 1) and low organic C content (site 8).

**Table 1.** Pearson's correlation coefficient (R) between MB-C, BR and BR-i at 0-20, 20-40 and 0-40 cm soil layers.

Parameters	MB-C		
	0-20 cm	20-40 cm	0-40 cm
BR	0.45*	0.70*	0.65*
BR-i	0.45*	0.54*	0.51*

\*:  $p < 0.01$ .

## Conclusions

The glucose addition strongly increased the soil respiration. The indexes BR, BR-i,  $qCO_2$  and  $qCO_2-i$  showed differences among soils and depths. Further measurements will be performed to evaluate sugarcane response to N fertilization, in order to identify the relationship between fertilizer response and microbiological soil parameters.

## Acknowledgements



## Additional information



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