

Response of micropropagated sugarcane plants to diazotrophic endophytic bacteria

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The aim of this study was to evaluate the response of micropropagated sugarcane plants to 85 isolates of diazotrophic endophytic bacteria obtained from three genotypes (IAC5000, RB5536 and SP81-3250) grown in Sales de Oliveira, SP, with and without N fertilization. A greenhouse experiment was carried out with micropropagated sugarcane plantlets of the genotype IAC5000. The bacterial isolates were inoculated in two different moments: first in the micropropagated-plantlets culture medium, before being transplanted to the substrate, and 3 months after transplanting. Root and shoot dry matter, shoot N concentration and content, index of efficiency of N utilization, activity of nitrate reductase and chlorophyll content were analyzed. The inoculation did not increase leaf chlorophyll content and shoot N concentration. Higher plant growth was promoted by 20 bacterial isolates and two of them were able to increase shoot and root dry matter, N content, N-use efficiency and nitrate reductase activity. Specificity was not observed and the number of bacterial isolates from each genotype, which provided benefits to the plant, was similar. The results suggest the inoculation of diazotrophic endophytic bacteria can promote benefits to sugarcane.

Keywords: chlorophyll content, diazotrophic, dry matter, endophytic, nitrate reductase

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