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Eucalyptus growth promotion by endophytic *Bacillus* spp

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ABSTRACT. Clonal eucalyptus plantings have increased in recent years; however, some clones with high production characteristics have vegetative propagation problems because of weak root and aerial development. Endophytic microorganisms live inside healthy plants without causing any damage to their hosts and can be beneficial, acting as plant growth promoters. We isolated endophytic bacteria from eucalyptus plants and evaluated their potential in plant growth promotion of clonal plantlets of *Eucalyptus urophylla* x *E. grandis*, known as the hybrid, *E. urograndis*. Eighteen isolates of *E. urograndis*, clone 4622, were tested for plant growth promotion using the same clone. These isolates were also evaluated for indole acetic acid production and their potential for nitrogen fixation and phosphate solubilization. The isolates were identified by partial sequencing of 16S rRNA. *Bacillus subtilis* was the most prevalent species. Several *Bacillus* species, including *B. licheniformis* and *B. subtilis*, were found for the first time as endophytes of eucalyptus. *Bacillus* sp strain EUCB 10 significantly increased the growth of the root and aerial parts of eucalyptus plantlets

under greenhouse conditions, during the summer and winter seasons.

Key words: Plant-growth promotion; Endophytic microorganism; Rooting; *Eucalyptus*

