

SURVIVAL OF A *CORYMBIA* HYBRID INOCULATED WITH PLANT GROWTH PROMOTING BACTERIA AND REDUCED NITROGEN FERTILIZATION

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Using plant growth-promoting bacteria can increase the rooting and growth of *Corymbia* rooted cuttings. This study aimed to evaluate the potential of plant growth-promoting bacteria to increase the rooting and growth of clonal *Corymbia* cuttings and reduce the need for nitrogen fertilization. The treatments were established by a 4 x 2 + 1 factorial, in which the cuttings were inoculated at planting with *Exiguobacterium sibiricum*, *Pantoea vagans* and the combined inoculation of these bacteria (Es+Pv) and the control with the inoculation vehicle without bacteria (Control-V) and grown in a substrate with low nitrogen fertilization (19 mg per plant - Low N) or high nitrogen fertilization (38 mg per plant – High N). Another control was used, in which uninoculated cuttings without the inoculation vehicle were grown in a substrate fertilized with High N (Control-AN). Regardless of the level of nitrogen fertilization, the survival of the cuttings inoculated with the mixture of Es+Pv bacteria (average of 83 %) was higher than that of the Control- AN (70%). The greatest heights were observed in the rooted cuttings inoculated with Es+Pv and fertilized with Low N and those inoculated with *P. vagans* and fertilized with High N, which were 33 % and 44 % greater than the height of the Control-NA rooted cuttings, respectively. The largest collar diameters were observed in the rooted cuttings inoculated with *E. sibiricum* and *P. vagans* and fertilized with Low N and in those inoculated with *E. sibiricum* and fertilized with High N. On average, these diameters were 36 % larger than those of the Control-AN rooted cuttings. Total chlorophyll levels were higher in rooted cuttings inoculated with the bacterial strains *E. sibiricum*, *P. vagans* and Es+Pv and similar to the Control-AN. The survival percentage, height, diameter and chlorophyll content were higher in the rooted cuttings inoculated with the bacterial strains than in those not inoculated with bacteria. The bacteria *E. sibiricum* and *P. vagans* increase the growth of *Corymbia* rooted cuttings and the inoculations were beneficial with both low and high nitrogen fertilization.

Keywords: Clones, Planted forests, Vegetative propagation, Inoculation

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