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Biocontrol of *Botrytis cinerea* and *Calonectria gracilis* by eucalypts growth promoters *Bacillus* spp.

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1 **Biocontrol of *Botrytis cinerea* and *Calonectria gracilis* by eucalypts**
2 **growth promoters *Bacillus* spp.**

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11 Running title: Biocontrol of fungal pathogens by endophytic *Bacillus*.

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16

17 **Abstract**

18 The clonal *Eucalyptus* plants are commonly obtained by vegetative propagation under a
19 protected environment. This system improves the *Botrytis cinerea* and *Calonectria* spp
20 infection on the young eucalypts plantings, resulting gray mold and cutting rot
21 respectively. Currently, the unique available control method is based on chemicals. As
22 alternative, novel methods to manage plant diseases, endophytic microorganisms could
23 be an interesting alternative. Thus, we aimed to evaluate endophytic *Bacillus* isolated
24 from eucalypts as a biocontrol agent against *Botrytis cinerea* and *Calonectria gracilis*,
25 important fungal pathogens in the greenhouse, using clonal plantlets of *E. urograndis*.
26 Eight endophytic strains of *Bacillus*, previously described as eucalyptus growth

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