

## Supplementary Material

### Endophytic colonization of *Eucalyptus* by *Beauveria bassiana* and *Metarhizium anisopliae* and their effects on plant growth

Maisa Fernandes Ribeiro<sup>1</sup> (0000-0001-5625-2950), João Pedro Laurindo Rocha<sup>2</sup> (0000-0002-1397-1354), Jéssica Soares Pereira<sup>3</sup> (0000-0002-1662-7591), Danival José de Souza<sup>1</sup> (0000-0002-2839-1117), Noé Mitterhofer Eiterer Ponce de Leon da Costa<sup>1</sup> (0000-0002-0699-8313), Wagner Luiz Araújo<sup>2,4</sup> (0000-0002-4796-2616), Maira Ignacio Sarmento<sup>3</sup> (0000-0002-4260-3593), Renato Almeida Sarmento<sup>1,3\*</sup> (0000-0002-5379-9595)

<sup>1</sup>Graduate Programme in Plant Production, Federal University of Tocantins-UFT, Gurupi, TO 77410-530, Brazil

<sup>2</sup>Graduate Programme in Plant Physiology, Department of Plant Biology, Federal University of Viçosa-UFV, MG 36570-900, Brazil

<sup>3</sup> Graduate Program in Forestry and Environmental Sciences, Federal University of Tocantins-UFT, Gurupi, TO 77410-530, Brazil

<sup>4</sup> Max Planck Partner Group, Department of Plant Biology, Federal University of Viçosa-UFV, Viçosa, MG 36570-900, Brazil

\*Corresponding author: noe.eiterer@uft.edu.br (NMEPLC) and rsarmento@uft.edu.br (RAS)

**Table S1.** Summary of deviance analysis for counting of endophytic colonization by *B. bassiana* and *M. anisopliae* 15, 30, and 45 days after inoculation (d.a.i.) in different parts of *Eucalyptus* plants. The pseudo  $R^2$  was calculated considering McFadden's proposal (1972).

| Source of variation | Degrees of Freedom | Deviance            |        |
|---------------------|--------------------|---------------------|--------|
|                     |                    | Leaves              | Roots  |
| Fungus (F)          | 1                  | 19.24 <sup>**</sup> | 0.82   |
| Method (M)          | 1                  | 0.56                | 0.09   |
| Time (T)            | 2                  | 20.71 <sup>**</sup> | -      |
| AIC                 | -                  | 386.16              | 125.36 |
| Pseudo $R^2$        | -                  | 0.09                | 0.01   |

<sup>\*\*</sup> and <sup>\*</sup> significant at 1% and 5% probability by chi-square test.

**Table S2.** Summary of the analysis of variance for the traits of plant height (in cm), stem diameter (in mm), number of branches and number of leaves for the three fungi, two methods and four times evaluated in Gurupi (TO), 2020. SD stands for standard deviation.

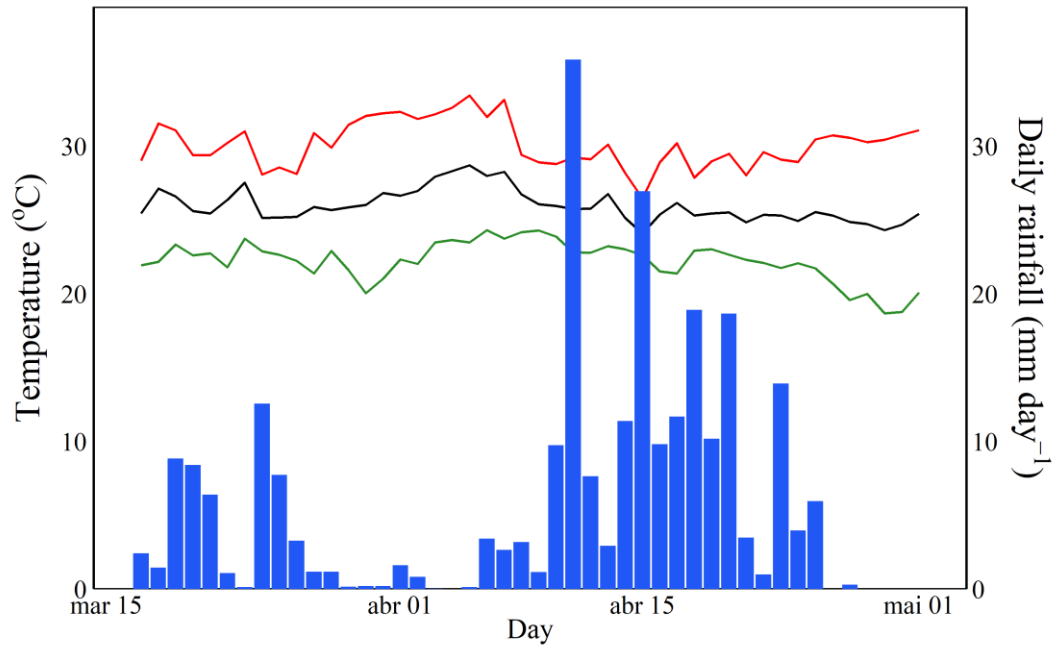
| Source of variation | DF | F value              |                       |                       |                     |
|---------------------|----|----------------------|-----------------------|-----------------------|---------------------|
|                     |    | Plant height<br>(cm) | Stem diameter<br>(mm) | Number of<br>branches | Number of<br>leaves |
| Time (T)            | 3  | 204.42**             | 91.65**               | 3.53*                 | 113.71**            |
| Method (M)          | 1  | 2.82                 | <0.01                 | 8.36**                | 9.05**              |
| Fungus (F)          | 2  | 5.23**               | 2.22                  | 4.45*                 | 6.36**              |
| T x M               | 3  | 0.75                 | 0.84                  | 0.38                  | 4.33**              |
| T x F               | 6  | 0.09                 | 1.10                  | 0.09                  | 1.41                |
| M x F               | 2  | 0.71                 | 1.16                  | 0.65                  | 0.05                |
| T x M x F           | 6  | 0.40                 | 0.22                  | 0.35                  | 0.08                |
| Maximum             | -  | 85.00                | 8.10                  | 11.00                 | 82.00               |
| Mean                | -  | 59.92                | 3.96                  | 4.60                  | 26.14               |
| Minimum             | -  | 32.00                | 1.95                  | 0.00                  | 10.00               |
| SD                  | -  | 13.88                | 0.93                  | 2.23                  | 14.93               |

\*\* and \* significant at 1% and 5% probability by F test.

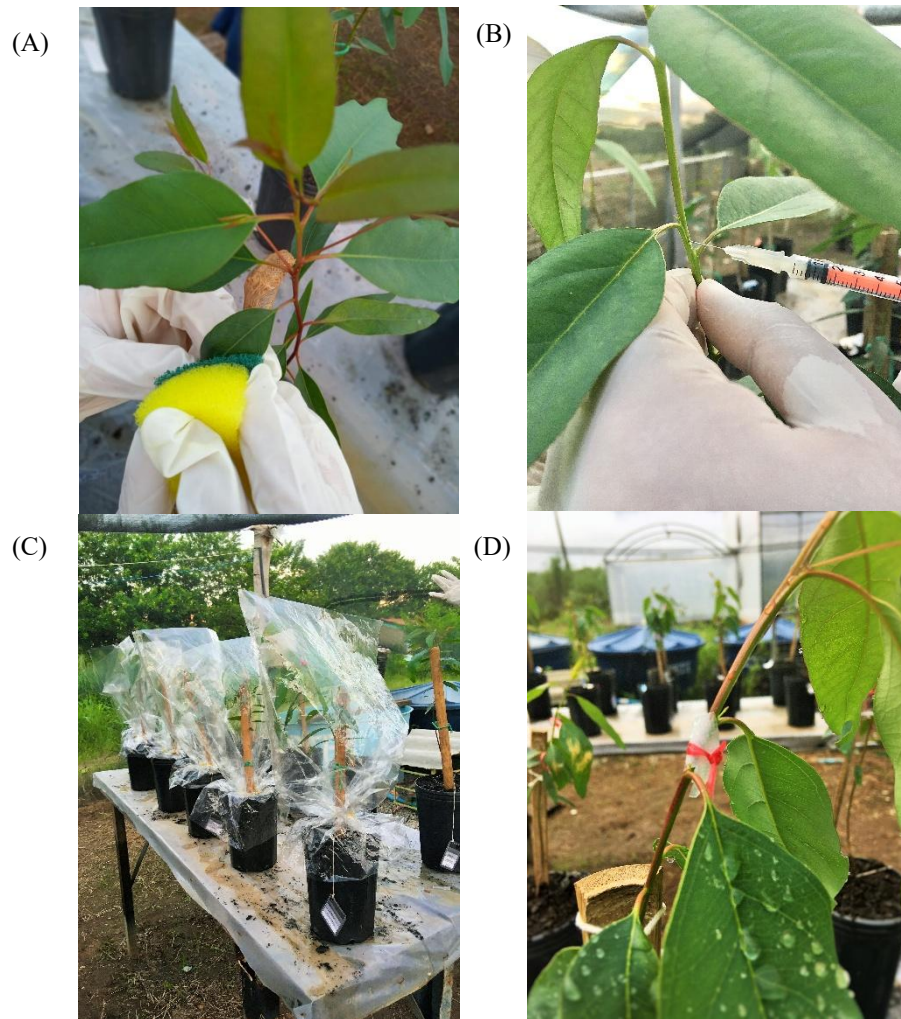
**Table S3.** Summary of the analysis of variance for the fresh biomass (shoot, root and total, in grams) and dry biomass (shoot, root and total, in grams) for the three fungi, two methods and four times evaluated in Gurupi (TO), 2020. SD stands for standard deviation.

| Source of variation | DF | F value       |       |       |             |       |       |
|---------------------|----|---------------|-------|-------|-------------|-------|-------|
|                     |    | Fresh biomass |       |       | Dry biomass |       |       |
|                     |    | Shoot         | Root  | Total | Shoot       | Root  | Total |
| Method (M)          | 1  | 0.31          | 1.22  | 0.60  | 0.19        | 1.04  | 0.48  |
| Fungus (F)          | 2  | 1.51          | 0.67  | 0.49  | 1.44        | 0.74  | 0.58  |
| M x F               | 2  | 0.02          | 1.16  | 0.76  | 0.04        | 1.13  | 0.72  |
| Maximum             | -  | 28.00         | 61.00 | 85.00 | 20.00       | 43.00 | 59.00 |
| Mean                | -  | 21.75         | 32.02 | 53.77 | 14.33       | 23.69 | 38.02 |
| Minimum             | -  | 12.00         | 17.00 | 29.00 | 7.00        | 12.00 | 19.00 |
| SD                  | -  | 3.79          | 11.89 | 13.79 | 2.92        | 7.97  | 9.53  |

\*\* and \* significant at 1% and 5% probability by F test.



**Figure S1.** Average temperature (black line), minimum temperature (green line), maximum temperature (red line) and precipitation (blue column) during the experiment in Gurupi (TO), between 2020-03-17 and 2020-05-01 (Sparks, 2018).



**Figure S2.** Inoculation methods used for *B. bassiana* and *M. anisopliae* via foliar spraying (A) and stem injection (B) in 150-day-old *Eucalyptus* plants. (C) Plants covered with plastic bags. (D) Sealing of the injection site with micropore tape.