

Supplementary Material

Endophytic fungi and drought tolerance: ecophysiological adjustment in shoot and root of an annual mesophytic host grass

Milena E. Manzur^{A,B}, Fabián A. Garelo^{B,C}, Marina Omacini^{C,D}, Hans Schnyder^E, Moira R. Sutka^F, and Pablo A. García-Parisi^{C,G,}*

^AIIBIO-CONICET-UNSAM, Avenida 25 de Mayo y Francia, San Martín, CPA B1650HMP Buenos Aires, Argentina.

^BDepartamento de Biología Aplicada y Alimentos, Cátedra de Fisiología Vegetal, Facultad de Agronomía, Universidad de Buenos Aires, Avenida San Martín 4453, C1417DSE Buenos Aires, Argentina.

^CIFEVA-CONICET, Facultad de Agronomía, Universidad de Buenos Aires, Avenida San Martín 4453, C1417DSE Buenos Aires, Argentina.

^DDepartamento de Recursos Naturales y Ambiente, Cátedra de Ecología, Facultad de Agronomía, Universidad de Buenos Aires, Avenida San Martín 4453, C1417DSE Buenos Aires, Argentina.

^ELehrstuhl für Grünlandlehre, Technische Universität München, D-85354 Freising-Weihenstephan, Germany.

^FDBBE-IBBEA, CONICET, Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires, Intendente Güiraldes 2160, Ciudad Universitaria, C1428EGA, Buenos Aires, Argentina.

^GDepartamento de Producción Animal, Cátedra de Forrajicultura, Facultad de Agronomía, Universidad de Buenos Aires, Avenida San Martín 4453, C1417DSE Buenos Aires, Argentina.

*Correspondence to: Pablo A. García-Parisi IFEVA-CONICET, Facultad de Agronomía, Universidad de Buenos Aires, Avenida San Martín 4453, C1417DSE Buenos Aires, Argentina Email: pgarcia@agro.uba.ar

Figure S1: Leaf elongation rate (LER, mm h⁻¹) of endophyte free and endophyte associated plants during the first seven days after starting the water restriction treatments (water availability from 100% to 0% of field capacity). Points represent the average LER of one leaf. LER was estimated by measuring the increment of leaf blade length between successive days after imposition of treatments.

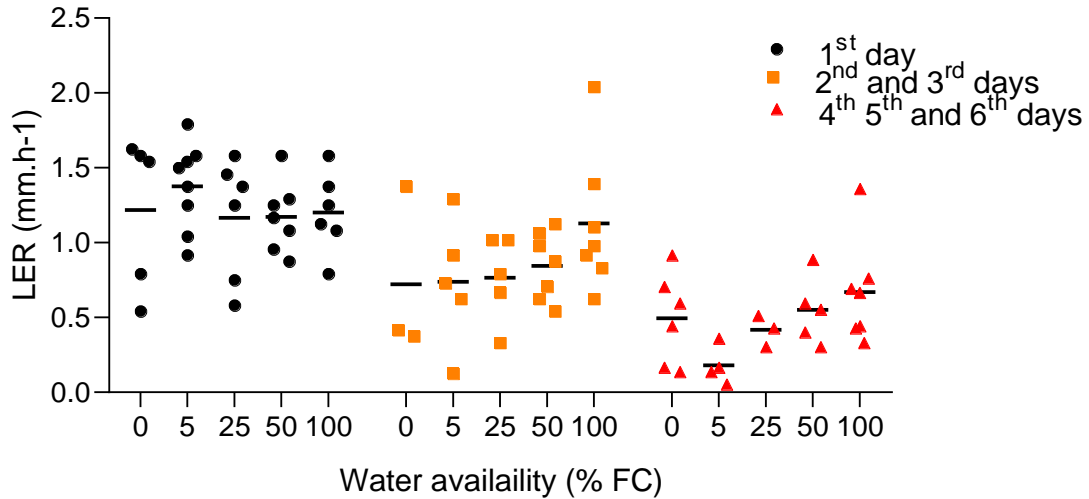


Figure S2: Relative biomass calculated as the difference between whole-plant biomass of 5% FC, 25% FC, 50% FC and field capacity (FC) and the average of 0% FC of endophyte-free (E-, circles) and endophyte associated (E+, squares) plants relative to that average. Dots indicate means and bars indicate $\pm 95\%$ confidence interval. * is included when the 95% confidence interval does not include 0.

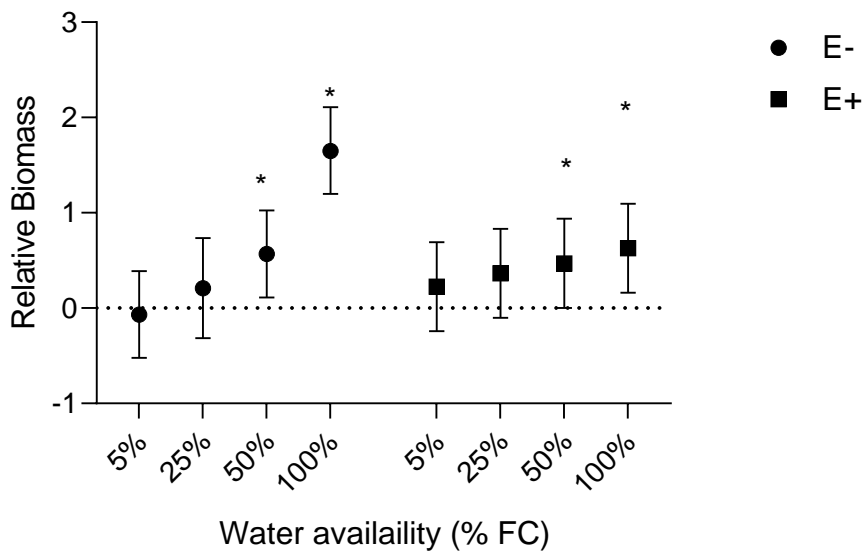


Figure S3: Sensitivity test of iWUE ($\mu\text{mol}\cdot\text{mol}^{-1}$) prediction assuming different $\delta^{13}\text{C}_{\text{air}}$ inside the growth chamber resulting from anthropogenic effects (e.g. human traffic and associated breath CO_2 in the building). iWUE was calculated as $i\text{WUE} = C_a (1 - C_i/C_a) / 1.6$, with 1.6 the ratio of stomatal conductance for water vapour and CO_2 . C_i/C_a was obtained from $\delta^{13}\text{C}_p = \delta^{13}\text{C}_{\text{air}} - a - (b - a) C_i/C_a$, with $\delta^{13}\text{C}_{\text{air}}$ ranging from -8.6 to -10.6, $a=4.4\text{‰}$ and $b=27\text{‰}$ (^{13}C discriminations associated with diffusion of CO_2 through the stomata and CO_2 fixation, but see Ma et al., 2020) and $\delta^{13}\text{C}_p$ the mean of endophyte- free (E-) and endophyte-associated (E+) plants watered to field capacity (FC) or 50%FC of experiment 1 (Fig. 4).

