

## Supplementary Material

### **Yield determinants, root distribution and soil water uptake in maize (*Zea mays*) hybrids differing in canopy senescence under post-silking drought**

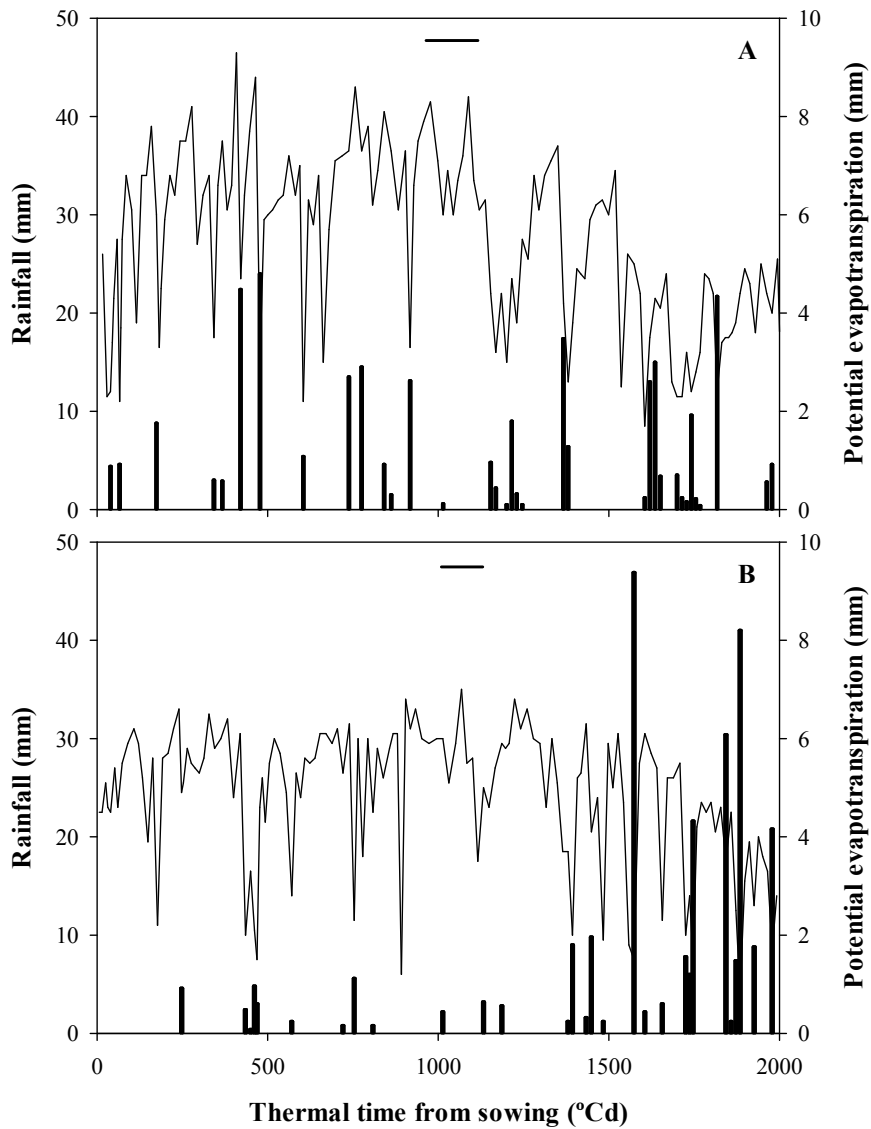
*M. Antonietta*<sup>A,\*</sup>, *M. L. Maydup*<sup>A</sup>, *M. G. Cano*<sup>A</sup>, *D. D. Fanello*<sup>A</sup>, *H. A. Acciaresi*<sup>B,C</sup> and *J. J. Guiamet*<sup>A</sup>

<sup>A</sup>Instituto de Fisiología Vegetal (INFIVE), Universidad Nacional de La Plata – CONICET, cc 327, 1900 La Plata, Buenos Aires, Argentina.

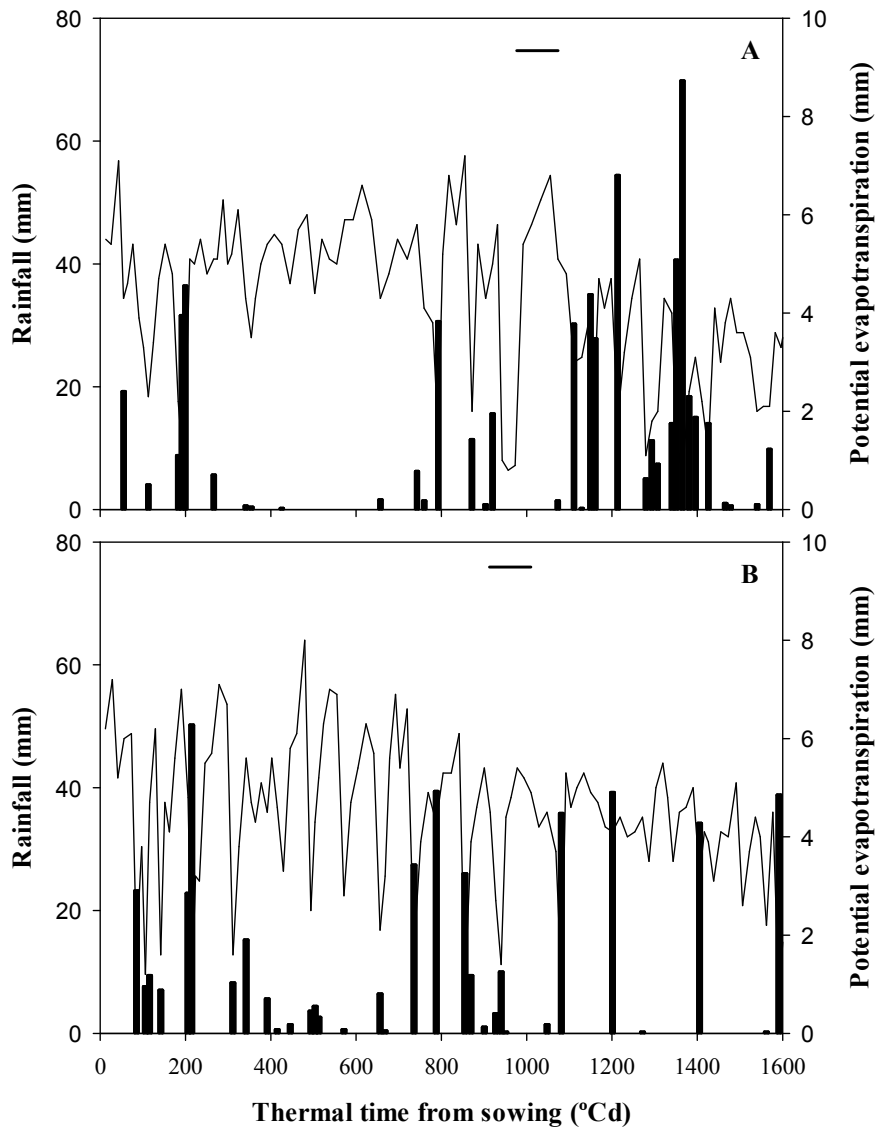
<sup>B</sup>Cátedra de Cerealicultura, Facultad de Ciencias Agrarias y Forestales, Universidad Nacional de La Plata, cc 31, 1900 La Plata, Buenos Aires, Argentina.

<sup>C</sup>Present address: EEA Pergamino, INTA, Av. Frondizi (Ruta 32) Km 4.5, 2700 Pergamino, Buenos Aires, Argentina.

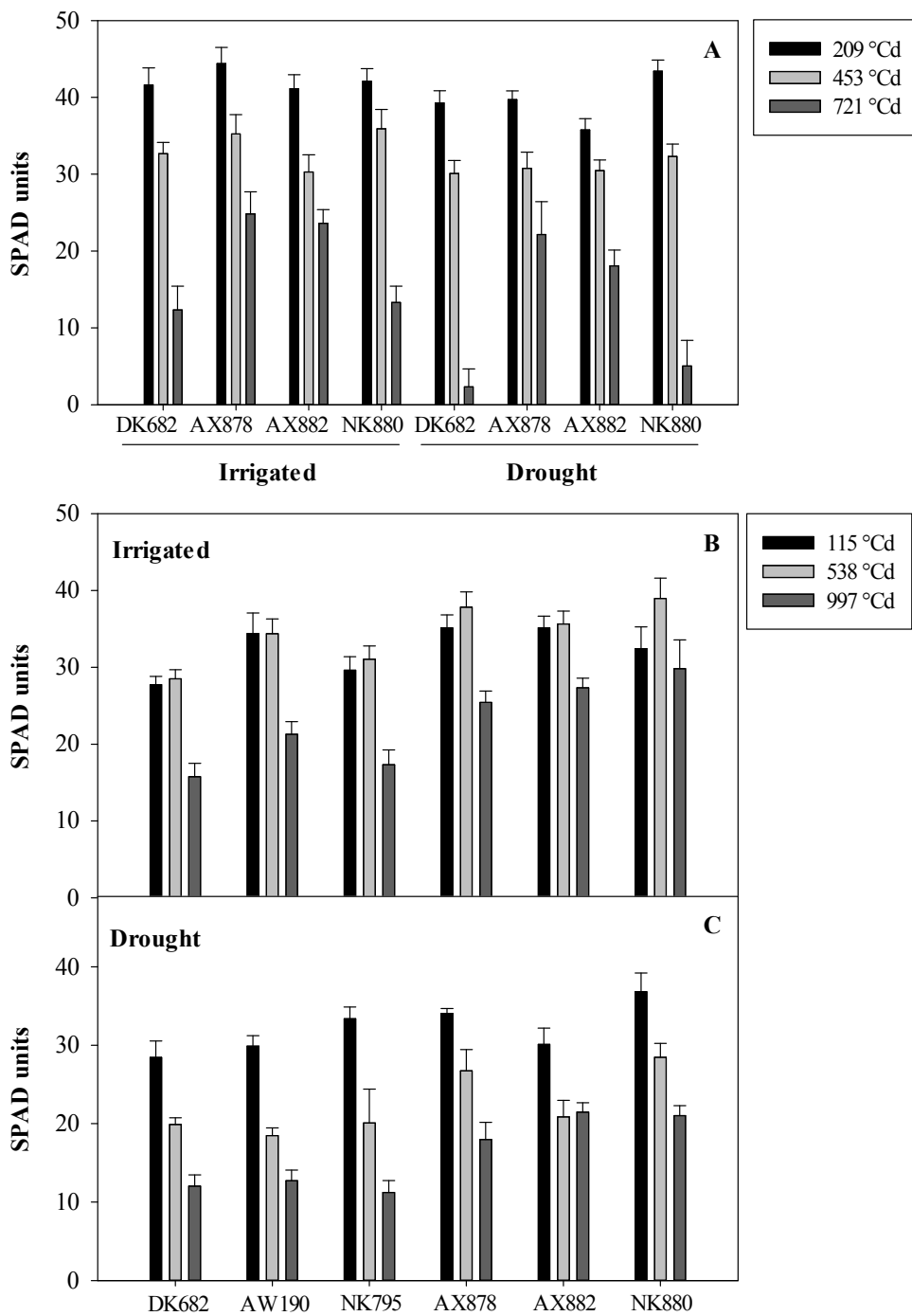
\*Corresponding author. M. Antonietta Instituto de Fisiología Vegetal (INFIVE), Universidad Nacional de La Plata – CONICET, cc 327, 1900 La Plata, Buenos Aires, Argentina E-mail: [antoniettamariana@gmail.com](mailto:antoniettamariana@gmail.com)



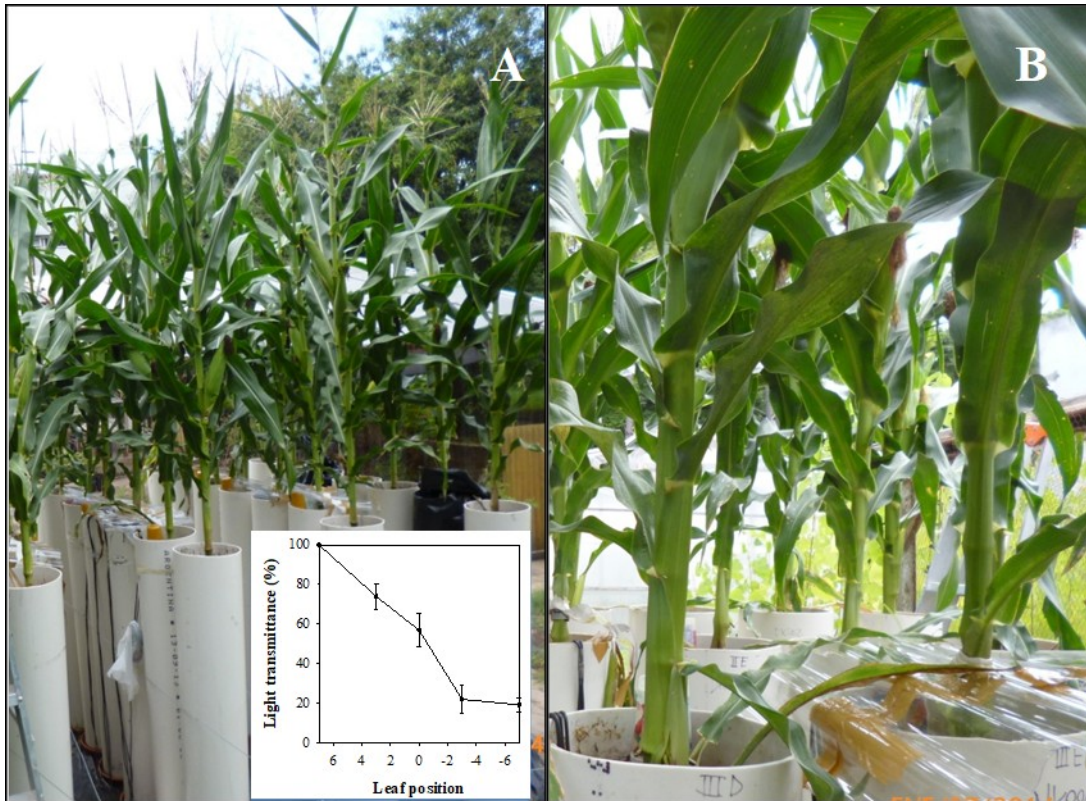
Supp. Fig. 1. Rainfall (bars, left axis) and potential evapotranspiration (lines, right axis) at San Pedro (Field-1, A) and La Plata (Field-2, B). The horizontal line indicates the anthesis-silking period in each experiment. Irrigation was supplied as needed until tassel stage; thereafter, plots under drought only received rainfall water while irrigation was maintained in irrigated plots.



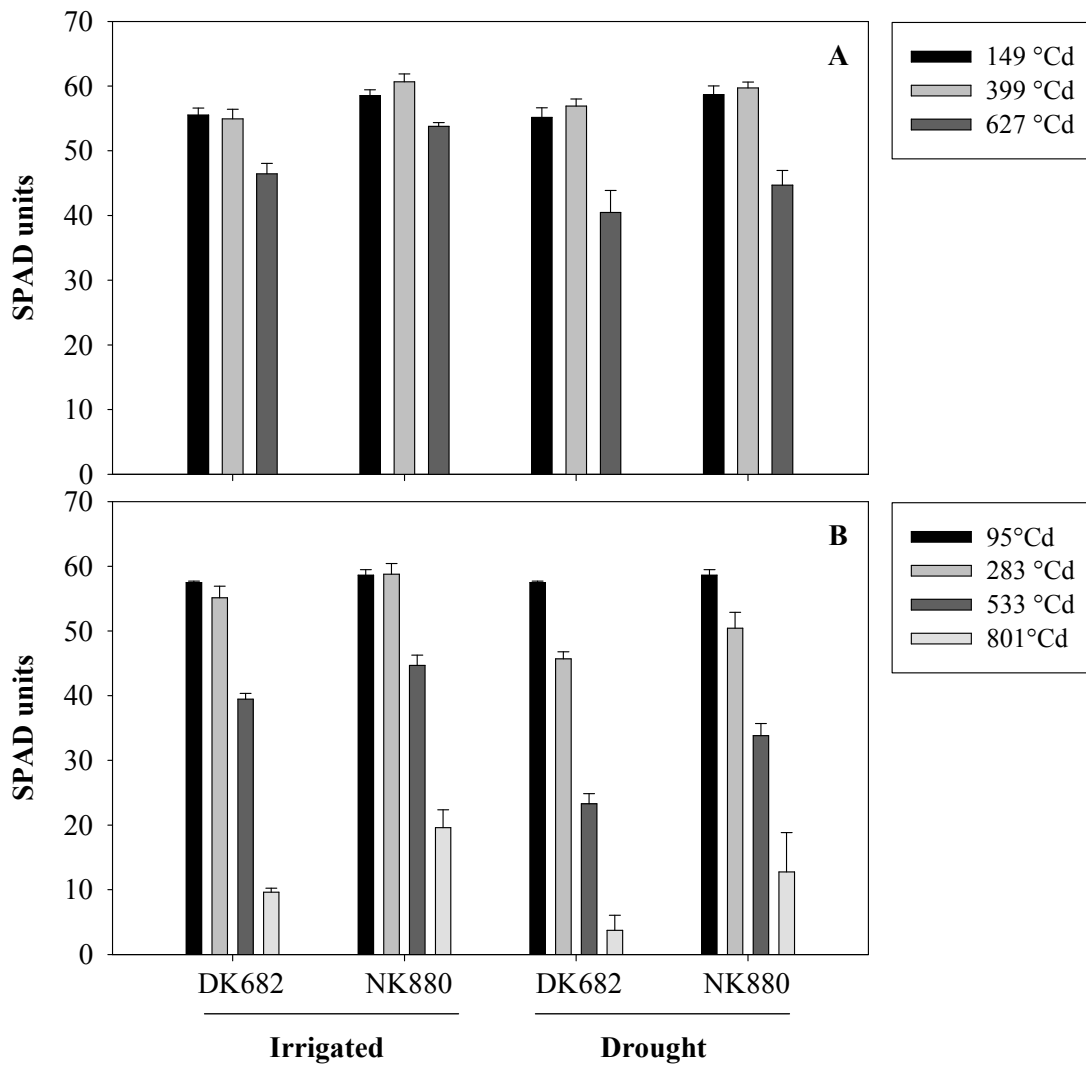
Supp. Fig. 2. Rainfall (bars, left axis) and potential evapotranspiration (lines, right axis) at Pot-1 (A) and Pot-2 (B). The horizontal line indicates the anthesis-silking period in each experiment. Irrigation was supplied as needed in the irrigated treatment or suspended after tassel stage in the drought treatment (Pot-1). In Pot-2, in order to manage drought intensity, plants under drought were irrigated with a third of the frequency of the irrigated plants.



Supp. Fig. 3. Average SPAD values per plant during the grain filling in Field-1 (A) and Field-2 under irrigation (B) and drought (C). Different bar colors denote the thermal time after silking when SPAD measurements were taken ( $^{\circ}\text{Cd}$ ). Vertical lines above the bars indicate the standard error. Significant Water and Hybrid effects were detected in both experiments and also Water x Hybrid interaction in Field-2 (not shown).



Supp. Fig. 4. (A) Pot arrangement in Pot-1 and Pot-2 experiments carried out at INFIVE, La Plata. The insert shows the % light transmittance across the canopy at silking. Light transmittance was determined at around silking, during midday on sunny days with an AccuPAR linear (1 m long) light meter (Decagon, WA, USA). (B) Water treatments (left pot, irrigated; right pot, drought): after tasseling, irrigation was suspended in plants under drought and individual “rain shelters” were placed in each pot to avoid the entry of rainfall water. Photos were taken 11 days after silking in Pot-1, and thus drought symptoms were still not evident.



Supp.

Fig. 5. Average SPAD values per plant during grain filling in Pot-1 (A) and Pot-2 (B) experiments under irrigation and drought. Different bar color denotes the thermal time after silking when SPAD measurements were taken (°Cd). Vertical lines above the bars indicate the standard error. Significant Water and Hybrid effects were detected in both experiments without Water x Hybrid interaction.

Supp. Table 1. Cumulative thermal time after silking achieved for similar days after silking in each experiment. Cumulative thermal time was calculated using a base temperature of 8 °C.

Days after silking	Thermal time after silking (°Cd)			
	Field-1	Field-2	Pot-1	Pot-2
0	0	0	0	0
10	157	155	165	147
20	307	325	318	301
30	482	475	460	457
40	630	640	597	606
50	747	775	716	751
60	885	911	837	918