



Warming and eCO₂ in the parental environment alters the seed performance of *Stylosanthes capitata* Vogel (Fabaceae), a tropical legume

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OBJECTIVES & METHODOLOGY

This research aimed to evaluate the effects warming (+2°C) and atmospheric CO₂ increase (+600ppm) on the **quality and germination parameters** of *Stylosanthes capitata* seeds.



Stylosanthes capitata



Trop-T-FACE Facility

Experimental groups:

eTE

eCO

aTE

aCO

Seed production and quality

- Seeds per inflorescence (SPI) (%)
- Hundred Seeds weight (HSW) (g)
- Abortion rates (%)
- Unviable seeds (%)



Germination (%) and seedling vigour (%)

RESULTS & DISCUSSION

Seed production and quality

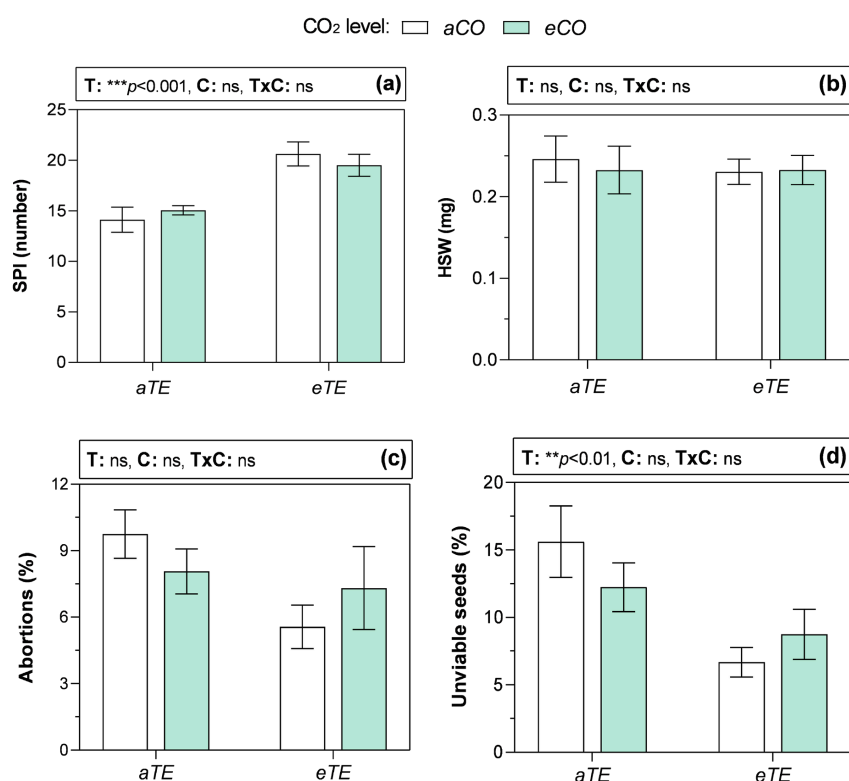


Figure 1. Analysis of variance for Seeds per inflorescence (SPI, %) (a), Hundred Seeds weight (HSW, g) (b), abortions (c) and unviable seeds (d) of *Stylosanthes capitata* exposed to four treatments. Data are the mean \pm SE. ns = non-significant effects of any factor, **p<0.01, ***p<0.001 significance.

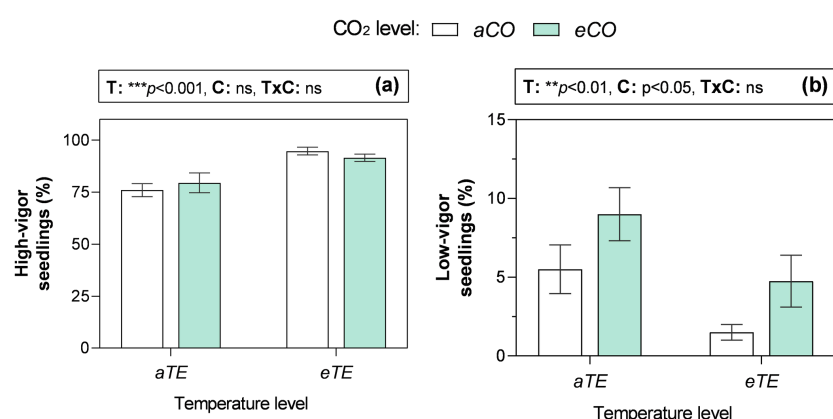
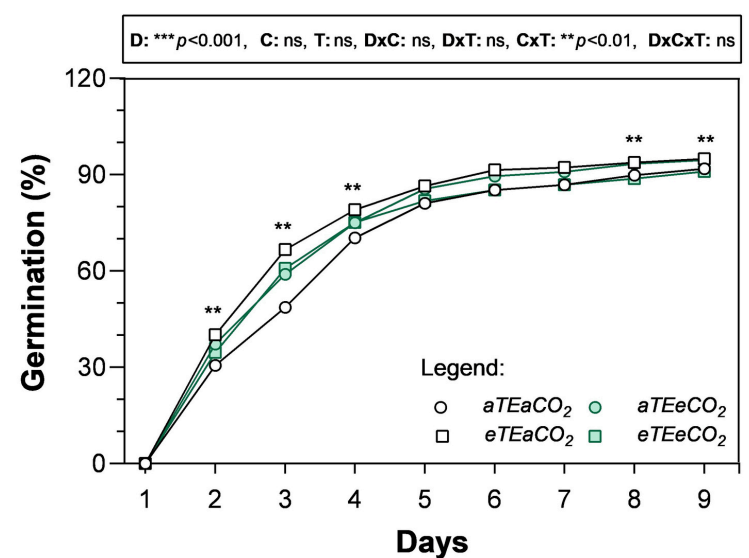


Figure 2. Analysis of variance for germination of high-vigor seedlings (a) and low-vigor seedlings (b) of *Stylosanthes capitata* exposed to four treatments. Data are the mean \pm SE. ns = non-significant effects of any factor, **p<0.01, ***p<0.001 significance.

Seed germination



CONCLUSIONS

Warming increased the number of seeds per inflorescence by ~37%, reduced unviable seeds by 55%. Warming and eCO₂ had opposite effects on seedling vigor, increasing it by 20% and decreasing it by 50%, respectively. The germination rate was influenced by the interaction of temperature and CO₂, mainly from the second to fourth days and the last days, while treatments did not affect the GSI and germination time (GT).

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