*International Journal of Wildland Fire* 25(12), 1273–1280
doi: 10.1071/WF16085_AC


**Supplementary material**

# Seed tolerance to heating is better predicted by seed dormancy than by habitat type in Neotropical savanna grasses

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**Section S1. The effects of heat and after-ripening on germination**

Germination was low (<50%) or absent in control and heat shock treatments for the dormant species *A. riparia*, *A. siccus*, *D. lehmanniana*, *E. inflexa* and *S. myuros* (Fig. S1). On the other hand, *A. setifolia* and *E. polytricha*, which both also display high levels of dormancy in fresh seeds (see Table 1 in main paper), had moderate levels of germination in the control treatment (>50%), indicating an effect of after-ripening on dormancy break once they were stored for 8 and 10 months, respectively (Table 1). Furthermore, heat shock at 110°C for 2.5 and 5 min had a positive effect on seed germination for *A. setifolia* in comparison to the control (Fig. S1). These results indicate that high temperatures generated by fire can improve germination for *A. setifolia*. Fire cues have been shown to increase germination in species with physiological dormancy after dormancy is broken. These results from *A. setifolia* may therefore be a result of the combined effects of after-ripening and heating.

Germination was high (>50%) in the control for the non-dormant species *A. lanata*, *A. villosus*, *E. muticus*, *H. longispicula*, *M. ferrugineum*, *P. pectinatum* and *S. villosum* (Fig. S1). Heat shock at 80°C had a negative effect on seed germination for *A. lanata*, *S. villosum*, *H. longispicula*, while it did not affect germination for *A. villous*, *E. muticus*, *M. ferrugineum* and *P. pectinatum* (Fig. S1). Germination of all non-dormant species was negatively affected after exposure to heat shock at 110°C for 2.5 and 5 min (Fig. S1); however, this was a consequence of loss of viability.

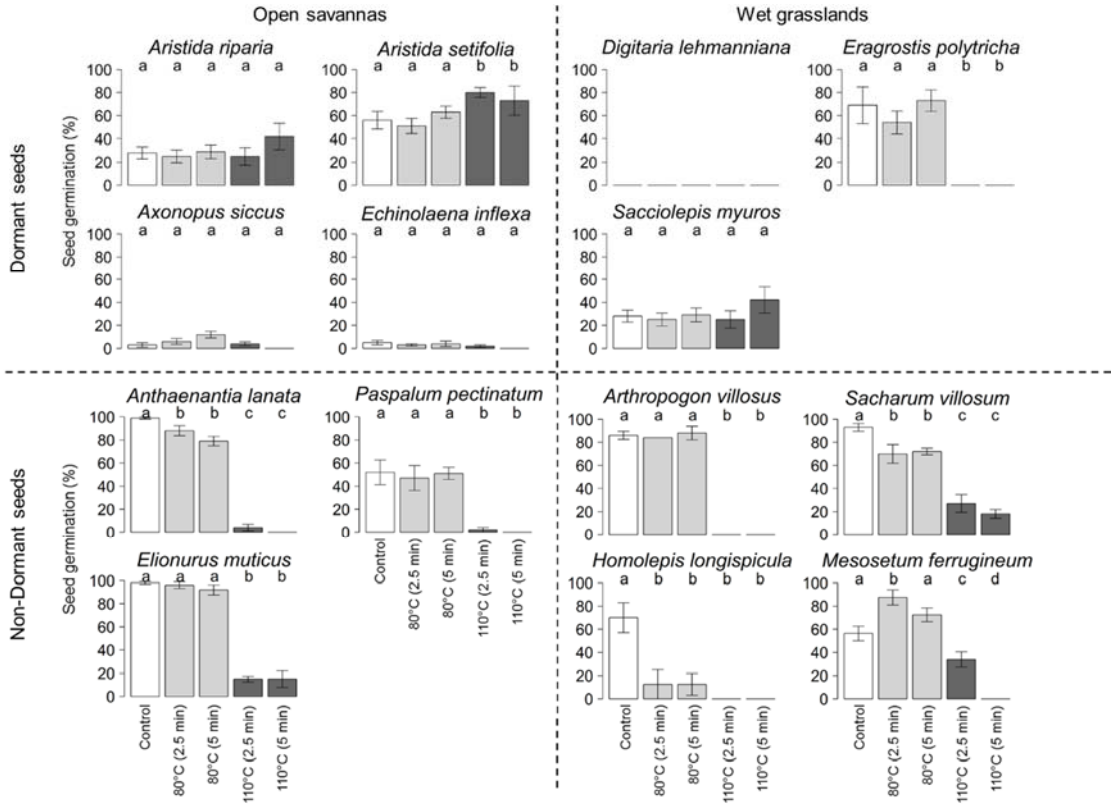


**Fig. S1.** Effects of heat shock treatments on the germination of seeds of Brazilian grass species from open savannas and wet grasslands. Mean viability (%) ± confidence interval. Means followed by the same letter do not differ significantly according to multiple comparisons made with the glht command. White bars = control, light grey bars = 80°C and dark grey bars = 110°C.

**Table S1. Total number of specimens analysed, and the number of those that had been collected after being burnt (and therefore representing evidence of resprouting) or showed no evidence of having been burnt when collected**

Vouchers from CEN and UB herbariums in Brasília

| Species | Total specimens viewed | Total number of burnt (resprouting) specimens | Total number of unburnt (sprouting) specimens |
|---|---|---|---|
| *Anthaenantia lanata* (Kunth) Benth. | 62 | 30 | 32 |
| *Aristida riparia* Trin. | 53 | 2 | 51 |
| *Aristida setifolia* Kunth | 92 | 2 | 90 |
| *Arthropogon villosus* Nees | 20 | 15 | 5 |
| *Axonopus siccus* var. *siccus* (Nees) Kuhlm. | 29 | 4 | 25 |
| *Echinolaena inflexa* (Poir.) Chase[A] | 66 | 3 | 63 |
| *Elionurus muticus* (Spreng.) Kuntze | 22 | 16 | 6 |
| *Eragrostis polytricha* Nees | 33 | 6 | 27 |
| *Saccharum villosum* Steud. | 17 | 5 | 12 |
| *Homolepis longispicula* (Döll) Chase | 6 | 5 | 1 |
| *Mesosetum ferrugineum* (Trin.) Chase | 21 | 8 | 13 |
| *Paspalum pectinatum* Nees ex Trin. | 65 | 30 | 35 |
| *Sacciolepis myuros* (Lam.) Chase | 25 | 0 | 25 |

[A]Evidence of resprouting for *E. inflexa* in: Silva and Klink (2001).

## References

Silva DA, Klink CA (2001) Dinâmica de foliação e perfilhamento de duas gramíneas C4 e uma C3 nativas do Cerrado. *Revista Brasileira de Botanica* **24**, 441–446. doi:10.1590/S0100-84042001000400010