Supplementary Materials

Seed persistence and germination strategies of Carajasia cangae (Rubiaceae), an endemic forb from the Amazon ironstone outcrop

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Supplementary Table 1. Number of seeds per Petri (replications) used for the in-situ storage according to the storage periods.

Storage time (days)	Replication	Number of seeds
0	Rep. 1	20
	Rep. 2	20
	Rep. 3	20
	Rep. 4	20
	Rep. 5	20
	Rep. 6	20
108	Rep. 1	21
	Rep. 2	28
	Rep. 3	28
	Rep. 4	29
	Rep. 5	26
	Rep. 6	23
223	Rep. 1	23

	Rep. 2	15
	Rep. 3	26
	Rep. 4	28
	Rep. 5	20
	Rep. 6	16
	Rep. 1	4
339	Rep. 2	20
	Rep. 3	15
	Rep. 4	7

The number of seeds per replication and the number of replications differed among storage periods due to the availability of seeds retrieved from the mesh bags.

Supplementary Table 2. Effect of storage conditions and time on viability of Carajasia cangae seeds.

Coefficients	Estimate	SE	Z-value	P-values
Intercept	1.311	0.18	7.27	<0.001
-20C	0.04	0.246	0.16	0.87
Field	0.246	0.26	0.95	0.34
5C	0.012	0.254	0.05	0.96
Time	-0.004	0.001	-3.78	<0.001
-20C:Time	-0.0003	0.001	-0.23	0.81
Field:Time	-0.004	0.001	-2.72	0.006
5C:Time	-0.001	0.001	-0.89	0.38

Reference levels for effect estimation: 28C storage condition.

Supplementary Table 3. Effect of storage conditions and time on seed germination percentage of Carajasia cangae seeds.

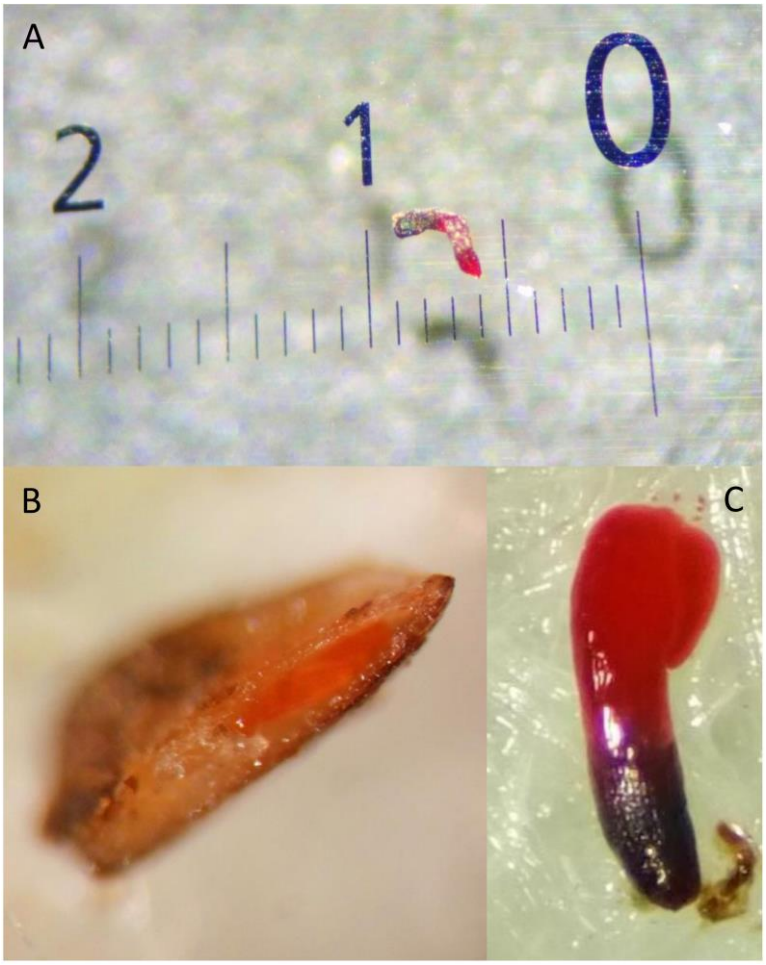
Coefficients	Estimate	SE	Z-value	P-values
Intercept	0.894	0.164	5.43	<0.001
-20C	0.002	0.227	0.01	0.99
Field	0.168	0.236	0.71	0.48
5C	-0.127	0.231	-0.55	0.58
Time	-0.004	0.001	-4.55	<0.001
-20C:Time	-0.004	0.001	-3.43	<0.001
Field:Time	-0.002	0.001	-2.72	0.07
5C:Time	-0.003	0.001	-1.89	0.04

Reference levels for effect estimation: 28C storage condition.

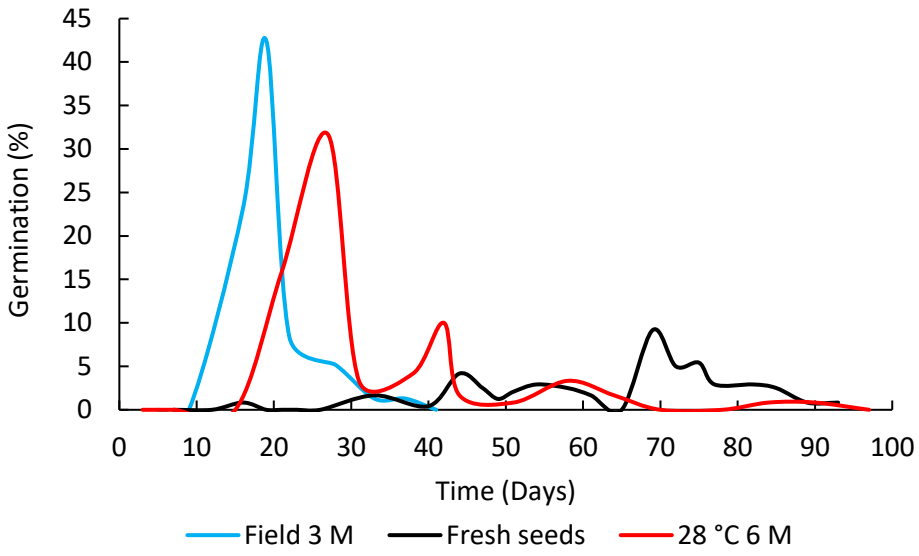
Supplementary Table 4. Effect of storage conditions and time on mean germination time of Carajasia cangae seeds.

Coefficients	Estimate	SE	Z-value	P-values
Intercept	0.02	0.003	8.14	<0.001
-20C	-0.002	0.003	-0.88	0.38
Field	0.001	0.003	0.47	0.64
5C	-0.002	0.003	-0.77	0.44
Time	3.7e-05	1.4e-05	2.45	0.013
-20C:Time	-7.2e-06	2.2e-05	-0.337	0.74
Field:Time	7.6e-05	2.7e-05	2.82	0.006
5C:Time	-2.2e-05	2e-05	-1.114	0.269

Reference levels for effect estimation: 28C storage condition.



Supplementary Figure S1. Seed and embryo of *Carajasia cangae* stained with Tetrazolium salt. Stained embryo is shown in the A and C and; the seed longitudinal section also showing the embryo stained inside. Scale in mm.



Supplementary Figure S2. Seed germination distribution over the time of fully dormant seeds (Fresh seeds, black line), partially alleviated seed dormancy (seed stored at 28 °C for 6 months, red line), and fully alleviated seed dormancy (seed stored in field for 3 months, blue line).