

## Supplementary Material

### **Seed dormancy and germination in different populations of the Argentinan endemic halophyte grass, *Sporobolus phleoides* (Poaceae: Chloridoideae)**

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### ANOVA tables

**Table 1:** Two way ANOVA of effects of Time of storage, Populations and their interactions on the viability percentages of seeds of *Sporobolus phleoides*.

	Degrees of Freedom	Mean Square	F	p-value
<b>% seed viability</b>				
Model	23	15.94	0.69	0.8367
Populations (P)	5	6.89	0.30	0.9115
Time of storage (TS)	3	6.66	0.29	0.8327
PxTS	15	20.84	0.91	0.5615
Error	69	23.01		

**Table 2:** Three-way ANOVA for the effect of Light, Temperatures, Populations and their interactions on germination of seeds of *Sporobolus phleoides*: a) Final Percentaje of Germination (FPG), and b) Coefficient of Germination (CG).

	Degrees of Freedom	Mean Square	F	p-value
<b>a) FPG</b>				
Model	89	1.1E-04	0.67	0.9875
Population (P)	5	8.7E-05	0.52	0.7625
Temperature (T)	4	3.3E-05	0.67	0.9392
Light (L)	2	2.3E-04	1.37	0.2547
P x T	20	1.6E-04	0.93	0.9359
P x L	10	7.0E-05	0.41	0.9389
T x L	8	7.4E-05	0.44	0.8957
P x T x L	40	1.1E-04	0.20	0.5521
Error	270	1.7E-04		
<b>b) CG</b>				
Model	89	0.02	1.01	0.4708
P	5	0.02	0.79	0.5544
T	4	0.05	2.36	0.0539
L	2	0.05	2.15	0.1184
P x T	20	0.02	1.15	0.2948
P x L	10	0.02	0.80	0.7974
T x L	8	0.02	1.16	0.3249
P x T x L	40	0.02	0.75	0.6739
Error	270	0.02		

**Table 3:** Three-way ANOVA for the effects of Time of Storage, Temperatures, Populations and their interactions on germination of seeds of *Sporobolus phleoides*: **a)** Final Percentaje of Germination (FPG), and **b)** Coefficient of Germination (CG). Two-way ANOVA for the effects of Time of Storage, Populations and their interactions on: **c)** FPG at 20°C, **d)** FPG at 30°C, **e)** FPG at 20-30°C

	Degrees of Freedom	Mean Square	F	p-value
<b>a) FPG</b>				
Model	71	0.06	7.98	<0.0001
Populations (P)	5	0.02	26.95	<0.0001
Time of storage (TS)	3	0.06	28.19	<0.0001
Temperature (T)	2	0.06	26.24	<0.0001
P x TS	15	0.01	5.54	<0.0001
P x T	10	0.02	9.50	<0.0001

TS x T	6	0.01	2.87	0.0001
P x T x TS	30	0.01	5.15	<0.0001
Error	216	2.3E-03		
<b>b) CG</b>				
Model	71	3.99	8.95	<0.0001
P	5	12.08	27.14	<0.0001
TS	3	10.88	24.43	<0.0001
T	2	19.73	44.32	<0.0001
P x TS	15	2.55	5.74	<0.0001
P x T	10	5.42	12.17	<0.0001
TS x T	6	1.96	4.40	0.0003
P x T x TS	30	1.54	3.47	<0.0001
Error	216	0.45		
<b>c) FPG at 20°C</b>				
Model	23	3.2E-03	5.97	<0.0001
P	5	1.6E-03	2.98	0.0167
TS	3	0.02	30.42	0.0214
P x TS	15	1.1E-03	2.07	<0.0001
Error	72	5.4E-04		
<b>d) FPG at 30°C</b>				
Model	23	0.04	9.21	<0.0001
P	5	0.08	21.06	<0.0001
TS	3	0.04	5.07	<0.0001
P x TS	15	0.02	10.14	<0.0001
Error	72	4.0E-03		
<b>e) FPG at 20-30°C</b>				
Model	23	0.01	4.75	<0.0001
P	5	0.02	8.24	<0.0001
TS	3	0.03	13.33	<0.0001
P x TS	15	4.3E-03	1.88	0.0402
Error	72	2.3E-03		

**Table 4:** Three-way ANOVA for the effects of Populations (P), Time of cold stratification (TCS), Nitrates (N) and their interactions on germination of seeds of *Sporobolus phleoides*: **a)** Final Percentage of Germination (FPG), and **b)** Coefficient of Germination (CG). Two-way ANOVA for the effects of Populations, Nitrates and their interactions on: **c)** FPG at 0 days of TCS, **d)** FPG at 30 days of TCS, **e)** FPG at 100d of TCS, **f)** CG at 0 days of TCS, **g)** CG at 30 days of TCS, **h)** CG at 100d of TCS.

	Degrees of Freedom	Mean Square	F	p-value
<b>a) FPG</b>				
Model	35	0.39	143.34	<0.0001
Populations (P)	5	0.03	12.24	<0.0001
Time of cold stratification (TCS)	2	5.57	2063.94	<0.0001
Nitrates (N)	1	0.79	293.57	<0.0001
P x TCS	10	0.04	14.21	<0.0001
P x N	5	0.01	4.15	0.0017
TCS x N	2	0.45	165.31	<0.0001
P x TCS x N	10	0.01	4.08	0.0001
Error	108	2.7E-03		

<b>b) CG</b>				
Model	35	78.28	67.12	<0.0001
P	5	8.41	7.21	<0.0001
TCS	2	956.73	820.33	<0.0001
N	1	401.73	344.45	<0.0001
P x TCS	10	10.02	8.59	<0.0001
P x N	5	3.00	2.57	0.0305
TCS x N	2	16.37	99.78	<0.0001
P x TCS x N	10	3.46	2.96	0.0025
Error	108	1.17		
<b>c) FPG at 0d of TCS</b>				
Model	11	1.7E-0	2.90	0.0078
P	5	3.2E-03	5.46	0.0008
N	1	1.0E-03	1.74	0.7257
P x N	5	5.8E-04	0.57	0.1959
Error	36	3.3E-04		
<b>d) FPG at 30d of TCS</b>				
Model	11	0.17	67.13	<0.0001
P	5	0.03	10.27	<0.0001
N	1	1.58	637.91	<0.0001
P x N	5	0.02	9.84	<0.0001
Error	36	2.5E-03		
<b>e) FPG at 100d of TCS</b>				
Model	11	0.05	9.88	<0.0001
P	5	0.08	16.11	<0.0001
N	1	0.10	19.68	0.0001
P x N	5	0.01	1.68	0.1636
Error	36	0.01		
<b>f) CG at 0d of TCS</b>				
Model	11	0.27	3.38	0.0027
P	5	0.50	6.31	0.0003
N	1	0.01	0.15	0.3781
P x N	5	0.09	1.10	0.6989
Error	36	0.08		
<b>g) CG at 30d of TCS</b>				
Model	11	46.08	67.61	<0.0001
P	5	6.10	8.94	<0.0001
N	1	447.66	656.81	<0.0001
P x N	5	5.75	8.43	<0.0001
Error	36	0.68		
<b>h) CG at 100d of TCS</b>				
Model	11	28.77	10.51	<0.0001
P	5	21.84	7.98	<0.0001
N	1	186.80	68.22	<0.0001
P x N	5	4.08	1.49	0.2173
Error	36	2.74		

**Table 5:** Two way ANOVA of effects of Populations, Puncturing and their interactions on the germination of seeds of *Sporobolus phleoides*: **a)** Final Percentage of Germination (FPG), and **b)** Coefficient of Germination (CG).

	Degrees of Freedom	Mean Square	F	p-value
<b>a) FPG</b>				
Model	11	1.03	2262.35	<0.0001
Populations (P)	5	1.3E-03	2.81	0.0305
Puncturing (Pu)	1	11.33	24869.93	<0.0001
P x Pu	5	1.7E-04	0.38	0.8588
Error	36	4.6E-04		
<b>b) CG</b>				
Model	11	291.79	3915.36	<0.0001
P	5	0.18	2.47	0.0507
Pu	1	3208.55	43053.08	<0.0001
P x Pu	5	0.05	0.71	0.6209
Error	36	0.07		

**Table 6:** Two way ANOVA of the effects of Populations, Puncturing and their interactions on the percentage of imbibition of seeds of *Sporobolus phleoides*: **a)** after 24 h of hydration, **b)** after 0 h of hydration, **c)** after 2 h of hydration, **d)** after 4 h of hydration, **e)** after 6 h of hydration, **f)** after 8 h of hydration.

	Degrees of Freedom	Mean Square	F	p-value
<b>a) % of imbibition at 24 h</b>				
Model	3	0.08	35.57	<0.0001
Population (P)	1	0.02	11.08	0.0060
Puncturing (Pu)	1	0.20	92.34	<0.0001
P x Pu	1	0.01	3.49	0.0863
Error	12	2.2E-03		
<b>b) % of imbibition at 0 h</b>				
Model	3	8.4E-07	15.61	0.0002
P	1	2.3E-06	43.44	<0.0001
Pu	1	1.1E-07	1.97	0.2576
P x Pu	1	7.6E-08	1.41	0.1855
Error	12	5.4E-08		
<b>c) % of imbibition at 2 h</b>				
Model	3	3.1E-06	37.41	<0.0001
P	1	5.5E-06	66.60	<0.0001
Pu	1	3.4E-06	4.34	0.0592
P x Pu	1	8.3E-08	41.28	<0.0001
Error	12	3.6E-07		
<b>d) % of imbibition at 4 h</b>				
Model	3	3.7E-06	29.65	29.65
P	1	7.7E-06	62.54	<0.0001
Pu	1	3.0E-06	2.24	<0.0001
P x Pu	1	1.2E-07	24.17	0.0004
Error	12	2.8E-07		
<b>e) % of imbibition at 6 h</b>				
Model	3	3.7E-06	32.48	<0.0001

P	1	8.1E-06	70.89	<0.0001
Pu	1	2.4E-06	20.97	0.0006
P x Pu	1	6.4E-07	5.59	0.0358
Error	12	1.1E-07		
<b>f) % of imbibition at 8 h</b>				
Model	3	4.0E-06	29.36	<0.0001
P	1	9.2E-06	67.47	<0.0001
Pu	1	2.0E-06	14.97	0.0022
P x Pu	1	7.7E-07	5.65	0.0350
Error	12	1.4E-07		

**Table 7:** Two way ANOVA of effects of Populations, Inhibitors and their interactions on the germination of embryos of *Sporobolus phleoides*: **a)** Final Percentage of Germination (FPG), and **b)** Coefficient of Germination (CG).

	Degrees of Freedom	Mean Square	F	p-value
<b>a) FPG</b>				
Model	3	6.9E-04	1.08	0.3953
Populations (P)	1	2.5E-05	0.04	0.8468
Inhibitors (I)	1	2.0E-03	3.16	0.1010
P x I	1	2.5E-05	0.04	0.8468
Error	12	6.4E-04		
<b>b) CG</b>				
Model	3	0.06	0.29	0.8316
P	1	0.01	0.03	0.8605
I	1	0.17	0.81	0.3868
P x I	1	0.01	0.03	0.8605
Error	12	0.22		