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Supplementary Material

Phenotypic and genotypic variation in Australian native *Sorghum* species along aridity clines

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Supplementary Material

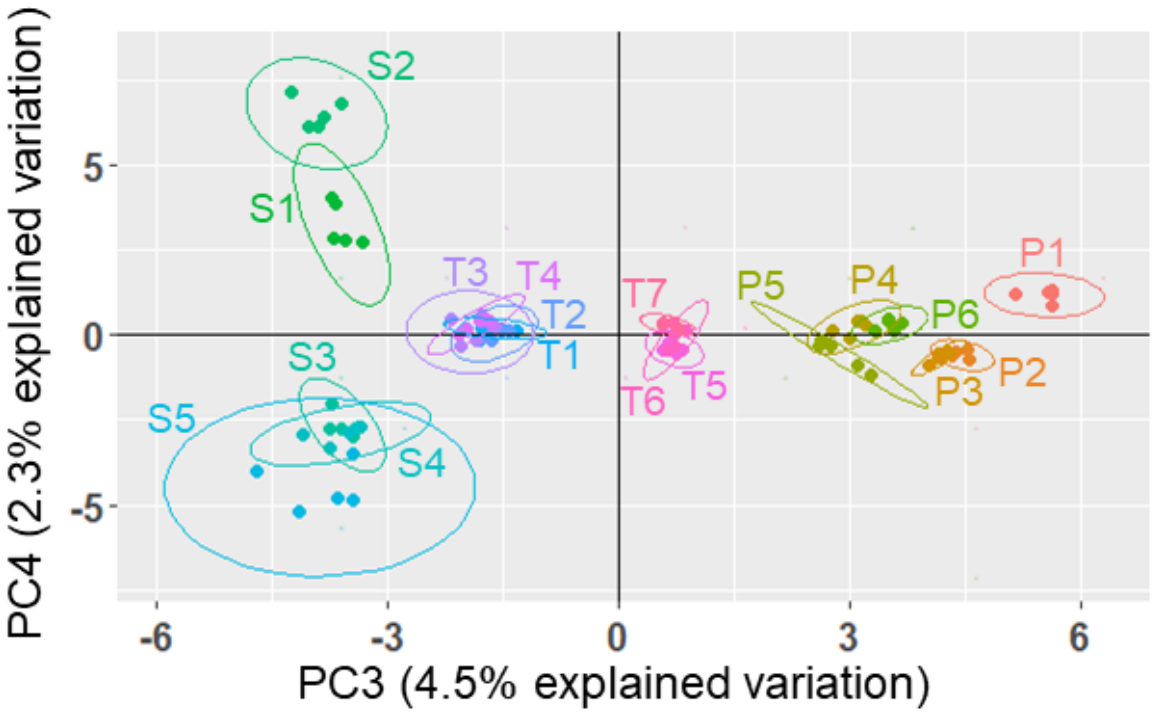

Fig. S1 (a) Principal coordinates analysis of single nucleotide polymorphisms from 18 accessions of three wild *Sorghum* species, plotted on the third and fourth principal component (PC) axes. Accessions are colour-coded and encompassed by ellipses.

Table S1 Fv/Fm of the 18 accessions across the three wild *Sorghum* species examined in this study (*S. plumosum*, *S. stipoideum* and *S. timorense*) Accessions are labelled according to Table 1. Values are means ± standard error (SEM)

Accession	Fv/Fm	SEM
P1	0.788	0.006
P2	0.811	0.006
P3	0.808	0.003
P4	0.818	0.005
P5	0.794	0.004
P6	0.796	0.006
S1	0.781	0.005
S2	0.788	0.006
S3	0.790	0.009
S4	0.795	0.004
S5	0.788	0.005
T1	0.806	0.008
T2	0.803	0.009
T3	0.787	0.005
T4	0.804	0.005
T5	0.811	0.009
T6	0.798	0.008
T7	0.779	0.010

Table S2 Results of linear regression analyses between mean annual aridity index and 11 defence traits in three wild *Sorghum* species. Aridity index was estimated at each of the plant accessions' original collection sites (Williams et al. 2010), with six *S. plumosum* accessions, five *S. stipoideum* accessions and seven *S. timorense* accessions grown. Significant R^2 values are shown in bold with asterisks

Defence trait	*S. plumosum*			*S. stipoideum*			*S. timorense*		
	Slope	R^2	n	Slope	R^2	n	Slope	R^2	n
leaf HCNp	-0.01	0.00	71	-0.48	0.21	90	0.52	0.18	105
sheath HCNp	0.64	0.52	71	-1.19	0.64	90	-3.12	0.28	105
root HCNp	-1.22	0.64	71	1.11	0.32	90	1.93	0.38	105
leaf [phenolics]	0.16	0.62	71	-30.96	**0.80***	90	26.80	0.41	105
sheath [phenolics]	0.19	0.59	71	-0.09	0.26	90	0.39	**0.67***	105
root [phenolics]	-3.37	**0.83***	71	-5.80	0.58	90	0.99	0.01	105
plant [Si]	0.13	0.33	71	0.29	**0.86***	90	0.00	0.00	105
specific leaf area	34.61	0.84	57	-69.38	0.09	60	-74.39	0.24	70
relative growth rate	-0.01	0.40	71	-0.05	0.36	90	-0.01	0.18	105
number of tillers	0.23	0.34	57	0.61	0.25	60	-2.10	**0.75***	70
root:shoot ratio	-0.20	**0.80***	71	0.01	0.00	90	1.25	**0.65***	105

Table S3 Leaf, sheath and root phenolic concentrations for the 18 accessions across the three wild *Sorghum* species examined in this study (*S. plumosum*, *S. stipoideum* and *S. timorense*). Accessions are labelled according to Table 1. Values are means ± standard error

		[Phenolics] (mg g^{-1})		
Accession	**n**	**Leaf**	**Sheath**	**Root**
P1	9	32.38 ± 1.20	15.18 ± 0.49	6.60 ± 0.27
P2	12	26.40 ± 1.16	11.00 ± 0.43	7.56 ± 0.20
P3	13	22.14 ± 0.89	9.59 ± 0.19	8.30 ± 0.29
P4	15	23.89 ± 0.63	11.85 ± 0.33	8.70 ± 0.29
P5	7	25.38 ± 1.04	10.29 ± 0.48	8.24 ± 0.30
P6	15	22.72 ± 0.80	9.66 ± 0.32	9.99 ± 0.35
S1	15	13.72 ± 0.61	10.27 ± 0.37	5.99 ± 0.18
S2	15	17.08 ± 0.75	10.89 ± 0.46	6.92 ± 0.20
S3	15	17.72 ± 0.75	10.16 ± 0.32	7.07 ± 0.20
S4	15	21.93 ± 1.02	11.08 ± 0.40	8.06 ± 0.28
S5	15	20.23 ± 1.72	11.11 ± 0.49	7.35 ± 0.14
T1	15	26.81 ± 0.92	14.68 ± 0.52	8.28 ± 0.17
T2	15	27.10 ± 1.06	14.93 ± 0.76	8.61 ± 0.41
T3	15	20.73 ± 0.94	13.04 ± 0.57	10.20 ± 0.30
T4	15	26.20 ± 0.84	14.15 ± 0.47	8.89 ± 0.27
T5	15	23.10 ± 1.28	13.01 ± 0.49	9.38 ± 0.23
T6	15	21.92 ± 0.62	13.03 ± 0.43	8.46 ± 0.26
T7	15	23.19 ± 0.91	12.82 ± 0.45	7.94 ± 0.22

Table S4 Leaf, sheath, root and whole plant silicon concentrations for the 18 accessions across the three wild *Sorghum* species examined in this study (*S. plumosum*, *S. stipoideum* and *S. timorense*). Accessions are labelled according to Table 1. Values are means ± standard error

		Silicon concentration (%)			
Accession	**n**	**Leaf**	**Sheath**	**Root**	**Whole plant**
P1	8	0.46 ± 0.04	0.85 ± 0.06	0.74 ± 0.04	0.60 ± 0.04
P2	12	0.30 ± 0.02	0.45 ± 0.03	0.51 ± 0.03	0.40 ± 0.02
P3	13	0.34 ± 0.02	0.46 ± 0.03	0.47 ± 0.02	0.41 ± 0.02
P4	15	0.33 ± 0.02	0.41 ± 0.02	0.56 ± 0.10	0.39 ± 0.01
P5	15	0.36 ± 0.02	0.47 ± 0.03	0.58 ± 0.05	0.45 ± 0.01
P6	7	0.34 ± 0.02	0.46 ± 0.03	0.55 ± 0.06	0.43 ± 0.02
S1	14	0.47 ± 0.03	0.56 ± 0.05	0.66 ± 0.07	0.48 ± 0.02
S2	10	0.45 ± 0.03	0.62 ± 0.10	0.70 ± 0.08	0.50 ± 0.03
S3	14	0.40 ± 0.01	0.41 ± 0.02	0.69 ± 0.05	0.45 ± 0.02
S4	14	0.37 ± 0.01	0.49 ± 0.04	0.49 ± 0.05	0.43 ± 0.02
S5	15	0.40 ± 0.04	0.51 ± 0.07	0.58 ± 0.06	0.43 ± 0.02
T1	15	0.35 ± 0.02	0.32 ± 0.01	0.51 ± 0.02	0.37 ± 0.01
T2	15	0.33 ± 0.02	0.34 ± 0.02	0.57 ± 0.04	0.37 ± 0.01
T3	15	0.34 ± 0.01	0.31 ± 0.01	0.54 ± 0.05	0.36 ± 0.01
T4	15	0.34 ± 0.02	0.33 ± 0.02	0.50 ± 0.04	0.36 ± 0.01
T5	15	0.34 ± 0.02	0.34 ± 0.02	0.75 ± 0.08	0.40 ± 0.01
T6	14	0.32 ± 0.01	0.30 ± 0.01	0.56 ± 0.04	0.35 ± 0.01
T7	15	0.34 ± 0.01	0.33 ± 0.02	0.68 ± 0.02	0.37 ± 0.01