

Supplementary Material

Quantitative trait locus mapping of the transpiration ratio related to preflowering drought tolerance in sorghum (*Sorghum bicolor*)

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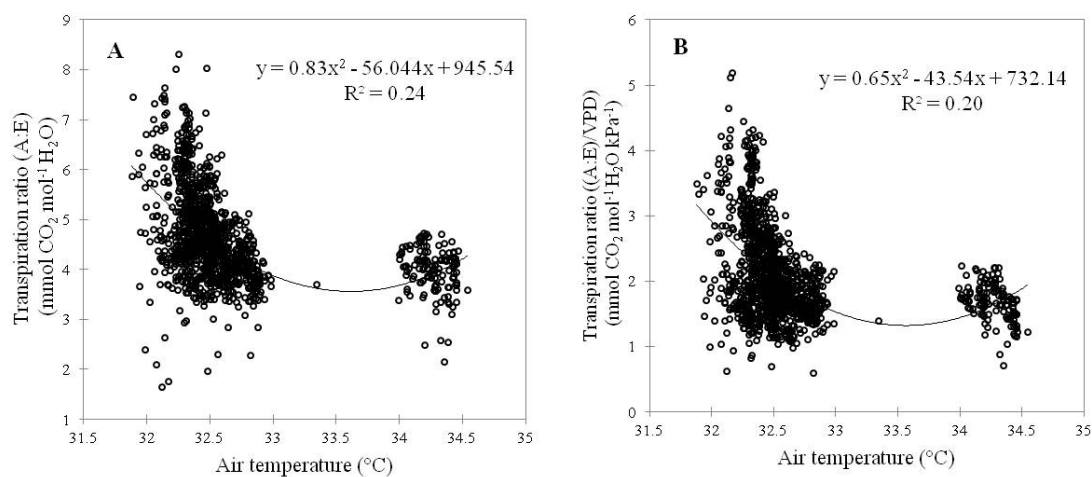


Fig. S1. Transpiration ratio as a function of air temperature: (A) Transpiration ratio (A:E) vs air temperature; (B) Transpiration ratio corrected with VPD ((A:E)/VPD) vs air temperature in 70 RILs and two parental lines at two different water regimes in Experiment 1.

Table S1. Mean squares and probability levels (*p*) by environment (water regime) from ANOVAs for gas exchange traits related to preflowering drought tolerance in a sorghum recombinant inbred line population derived from Tx430/Tx7078, in Experiment 1 (40 & 80% FC) & 2 (80% FC).

Source	df	A ($\mu\text{mol CO}_2 \text{ m}^{-2} \text{ s}^{-1}$)		E ($\text{mmol H}_2\text{O m}^{-2} \text{ s}^{-1}$)		A:E ($\text{mmol CO}_2 \text{ mol}^{-1} \text{ H}_2\text{O}$)	
		Mean square	<i>P</i>	Mean square	<i>P</i>	Mean square	<i>P</i>
Experiment 1							
<i>80% Water regime</i>							
Genotype	72	70.86	<0.0001	5.40	0.0022	0.88	<0.0001
Replication	3	823.26	<0.0001	383.87	<0.0001	132.85	<0.0001
Error	681	38.75		3.40		0.19	
<i>40% Water regime</i>							
Genotype	72	114.06	<0.0001	4.47	0.0073	1.02	<0.0001
Replication	3	4146.86	<0.0001	43.57	0.0001	116.96	<0.0001
Error	601	32.28		2.99		0.09	
Experiment 2							
80% Water regime	69	80.25	<.0001	0.33	0.0002	4.76	0.0105
Genotype							
Replication	1	962.64	<.0001	14.46	<.0001	69.33	<.0001
Days	3	420.36	<.0001	11.73	<.0001	663.76	<.0001
Error	479	28.89		0.19		3.21	

Table S2. Trait values for Tx430 and Tx7078 parental lines and their recombinant inbred lines (RILs) from greenhouse study in Experiment 2 (80% FC) at 41 DAP.

Trait		Tx430	Tx7078	RIL's mean	RIL's range
Leaf area	8th leaf (cm ²)	128.2 (77)	154.4 (21)	152.7 (29.6)	92.4-233.6
	Main Stem (cm ² plant ⁻¹)	585.1 (137)	964.0 (56)	900.1 (248.9)	381.8-1576.8
Stomata density (mm ⁻²)	Adaxil	58.4	71.4 (9.1)	97.7 (29.1)	51.9-149.3
	Abaxil	26.0	58.4	98.2 (33.3)	32.4-168.8
Biomass (g plant ⁻¹)	Leaf plant ⁻¹	2.3 (0.8)	3.6 (0.2)	4.6 (5.0)	1.9-33.6
	Stem plant ⁻¹	1.2 (0.3)	2.1 (0.01)	2.0 (0.7)	1.0-3.9
	Total dry weight plant ⁻¹	3.5 (1.2)	5.8 (0.21)	6.6 (5.0)	2.5-34.8
	8th leaf	0.4 (0.3)	0.7 (0.09)	1.6 (5.2)	0.4-31.7
Fresh weight	Leaf plant ⁻¹	16.8 (6.3)	24.6 (0.5)	23.6 (6.7)	8.83-41.0
	Stem plant ⁻¹	15.7 (7.1)	21.8 (0.3)	21.4 (6.6)	9.59-41.8

†Standard deviation in parenthesis; DAP = Days after planting