

Supplementary Material

Similar soil drying-induced stomatal closure in soybean genotypes varying in abscisic acid accumulation and stomatal sensitivity to abscisic acid

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Table S1. Experimental design and environmental conditions for each experiment.

	Genotypes	Pot Volume (cm ³)	T ^a (°C)	RH%	PPFD ($\mu\text{mol m}^{-2} \text{s}^{-1}$)	Photoperiod
Experiment 1	W82 - C12 - C08	762	28 \pm 2	32-35		
Experiment 2	W82 - LH1 - LH2	1000	26 \pm 2	30-35	1200-1400	12 hours (0900-2100h)

Table S2. Comparing relationships between stomatal conductance, soil water content, leaf water potential, leaf xylem sap ABA accumulation and leaf tissue ABA accumulation in two sequential experiments with Williams 82 conducted in the same greenhouse. Relationships are presented as dependent variable *versus* independent (x-) variable. ANCOVA determined each main effect (x-variable and experiment) and their interaction, with *p*-values reported. All data (Days 0 to 5) were first analysed, with statistical differences in the interaction term (indicated in bold text below) observed only when including Day 5. Repeating the analysis with data from Days 0 to 4 resulted in no significant interaction terms, indicating comparable physiological responses in both experiments.

	ANCOVA p-value					
	Experiment		x-variable		Exp.*x-var	
	Days 0-4	Days 0-5	Days 0-4	Days 0-5	Days 0-4	Days 0-5
Stomatal Conductance vs Soil Water Content 1Leaf	0.920	0.685	<0.001	<0.001	0.132	0.016
Stomatal Conductance vs Soil Water Content 2Leaf	0.312	0.792	<0.001	<0.001	0.495	0.019
Stomatal Conductance vs Leaf Water Potential 1Leaf	0.081	0.184	<0.001	<0.001	0.218	0.514
Stomatal Conductance vs Leaf Water Potential 2Leaf	0.701	0.824	<0.001	<0.001	0.715	0.741
Leaf Water Potential vs Soil Water Content 1Leaf	0.089	0.760	<0.001	<0.001	0.401	0.216
Leaf Water Potential vs Soil Water Content 2Leaf	0.070	0.805	<0.001	<0.001	0.616	0.010
Stomatal Conductance vs Leaf xylem sap ABA	0.660	0.625	<0.001	<0.001	0.138	<0.001
Stomatal Conductance vs Leaf tissue ABA	0.080	0.400	<0.001	<0.001	0.070	0.900
Leaf Water Potential vs Leaf xylem sap ABA	0.320	0.281	<0.001	<0.001	0.073	<0.001
Leaf Water Potential vs Leaf Tissue ABA	0.192	0.338	<0.001	<0.001	0.057	0.438
Leaf xylem sap ABA vs Soil Water Content	0.802	0.002	<0.001	<0.001	0.866	0.002
Leaf Tissue ABA vs Soil Water Content	0.327	0.194	<0.001	<0.001	0.248	0.980

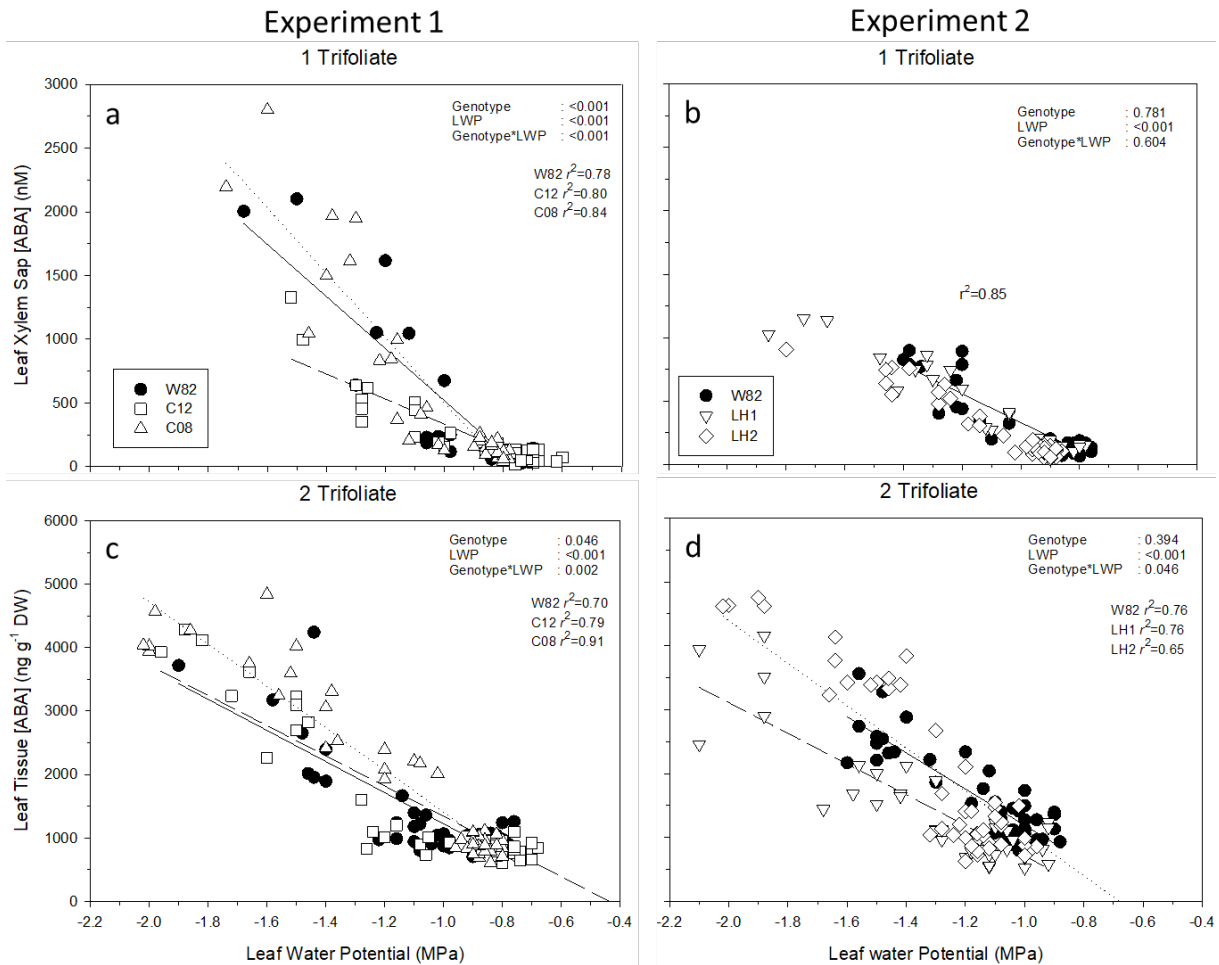


Figure S1. Relationships between leaf xylem sap ABA accumulation, leaf tissue ABA accumulation and leaf water potential during Experiments 1 (a, c) and 2 (b, d) in the first (a, b) and second (c, d) trifoliolate leaves. Filled circles represent W82 in both experiments as a reference. Hollow squares and triangles represent C12 and C08 respectively, and hollow inverted triangles and diamonds represent LH1 and LH2 respectively. Each symbol is an individual plant and regression lines were fitted to all genotypes (c), solid line = W82, long dash = C12 and LH1 and dotted line = C08 and LH2 (a, b and d) where $P < 0.05$. p -values determined by ANCOVA for each main effect (x -variable and genotype) and their interaction are reported.

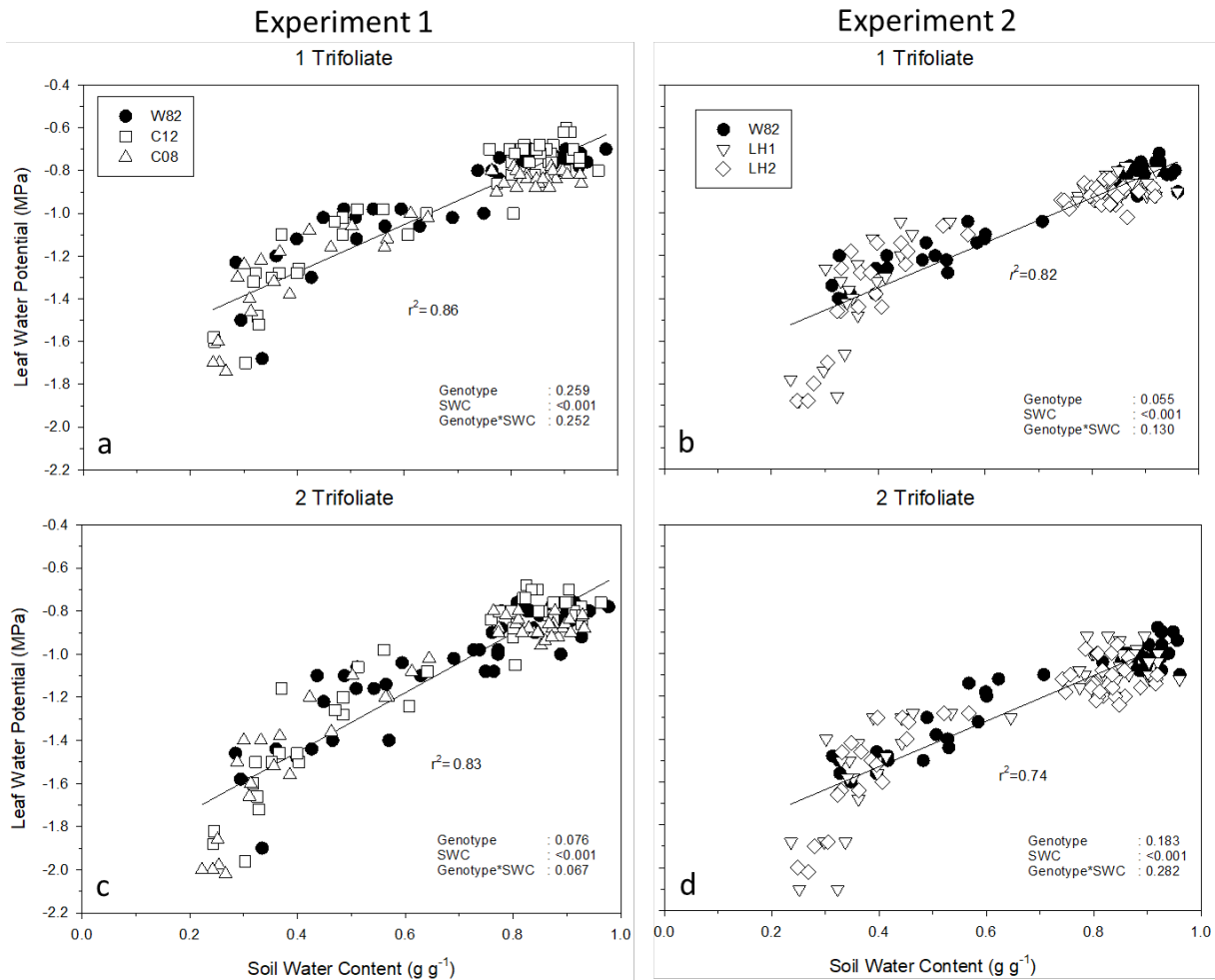


Figure S2. Relationships between leaf water potential and soil water content during Experiments 1 (a, c) and 2 (b, d) in the first (a, b) and second (c, d) trifoliolate leaves. Filled circles represent W82 in both experiments as a reference. Hollow squares and triangles represent C12 and C08 respectively, and hollow inverted triangles and diamonds represent LH1 and LH2 respectively. Each symbol is an individual plant and regression lines were fitted to all genotypes (per experiment and trifoliolate leaf) where $P < 0.05$. p -values determined by ANCOVA for each main effect (x -variable and genotype) and their interaction are reported.