

Supplementary material

Table S1: Mean and SE of additional stomatal parameters. All measures of length and width are in units of μm . Measures of area are in units of μm^2

	Control				Melatonin			
	26°C irrigated	26°C drought	38°C irrigated	38°C drought	26°C irrigated	26°C drought	38°C irrigated	38°C drought
Moderate stress (25 DAS)								
Abaxial stomata length	30.1 \pm 0.4	29.5 \pm 0.4	29.7 \pm 0.5	31.8 \pm 0.5	29.1 \pm 0.4	29.2 \pm 0.4	31.6 \pm 0.5	31 \pm 0.4
Abaxial stomata width	17.5 \pm 0.2	17 \pm 0.2	19.5 \pm 0.2	19.7 \pm 0.2	17.8 \pm 0.2	17.5 \pm 0.2	20.5 \pm 0.3	20.7 \pm 0.2
Abaxial stomata size	531 \pm 12	505 \pm 11	578 \pm 12	628 \pm 13	521 \pm 11	514 \pm 11	652 \pm 17	646 \pm 14
Abaxial pore length	20.6 \pm 0.4	20.2 \pm 0.5	20.3 \pm 0.4	21.4 \pm 0.5	19.9 \pm 0.4	19.4 \pm 0.4	21.1 \pm 0.5	20.8 \pm 0.5
Abaxial pore width	3 \pm 0.1	2.7 \pm 0.1	5.5 \pm 0.2	4 \pm 0.2	3.4 \pm 0.1	2.8 \pm 0.1	5.1 \pm 0.3	5.4 \pm 0.2
Adaxial stomata length	31.7 \pm 0.5	30.8 \pm 0.4	32.2 \pm 0.4	33.3 \pm 0.6	31.3 \pm 0.5	30.9 \pm 0.4	35.9 \pm 0.8	31.7 \pm 0.5
Adaxial stomata width	16.2 \pm 0.3	16.1 \pm 0.2	17 \pm 0.2	17.8 \pm 0.3	16.4 \pm 0.2	16 \pm 0.3	17.5 \pm 0.4	18.6 \pm 0.3
Adaxial pore length	19.6 \pm 0.5	18 \pm 0.4	21.1 \pm 0.3	21.8 \pm 0.6	19.2 \pm 0.4	17.1 \pm 0.4	23.3 \pm 0.9	20.7 \pm 0.5
Adaxial pore width	1.8 \pm 0.1	1.9 \pm 0.1	3 \pm 0.2	3 \pm 0.2	2 \pm 0.1	1.8 \pm 0.1	2.9 \pm 0.3	3.7 \pm 0.2
Severe stress (27 DAS)								
Abaxial stomata length	30.6 \pm 0.4	29.8 \pm 0.4	33.7 \pm 0.4	30.1 \pm 0.4	30.1 \pm 0.4	29.9 \pm 0.4	33.9 \pm 0.5	31.2 \pm 0.4
Abaxial stomata width	17.6 \pm 0.2	17 \pm 0.2	22.4 \pm 0.4	19 \pm 0.2	17.8 \pm 0.2	16.9 \pm 0.2	21 \pm 0.3	19.9 \pm 0.3
Abaxial stomata size	543 \pm 11	506 \pm 10	756 \pm 17	575 \pm 13	535 \pm 9	508 \pm 11	716 \pm 16	622 \pm 14
Abaxial pore length	19.8 \pm 0.4	19.8 \pm 0.5	23.8 \pm 0.5	20.5 \pm 0.4	19.7 \pm 0.4	20 \pm 0.4	24.1 \pm 0.5	22.5 \pm 0.4
Abaxial pore width	2.7 \pm 0.1	2.5 \pm 0.1	5.1 \pm 0.3	2.8 \pm 0.2	3 \pm 0.2	2.5 \pm 0.1	4.5 \pm 0.2	3 \pm 0.2
Adaxial stomata length	32.5 \pm 0.6	32.9 \pm 0.5	34.3 \pm 0.4	30.3 \pm 0.4	30.8 \pm 0.5	32.4 \pm 0.6	36 \pm 0.5	33.2 \pm 0.5
Adaxial stomata width	17 \pm 0.3	16.6 \pm 0.3	20.2 \pm 0.3	17 \pm 0.2	16.4 \pm 0.2	16.1 \pm 0.2	19.7 \pm 0.3	18.7 \pm 0.3
Adaxial pore length	19.5 \pm 0.6	19.7 \pm 0.5	23 \pm 0.3	20 \pm 0.4	18.1 \pm 0.5	19.1 \pm 0.6	24.8 \pm 0.5	21.8 \pm 0.3
Adaxial pore width	2.6 \pm 0.2	2.3 \pm 0.1	4.3 \pm 0.3	2.1 \pm 0.1	2.2 \pm 0.1	1.7 \pm 0.1	2.9 \pm 0.2	2.6 \pm 0.2

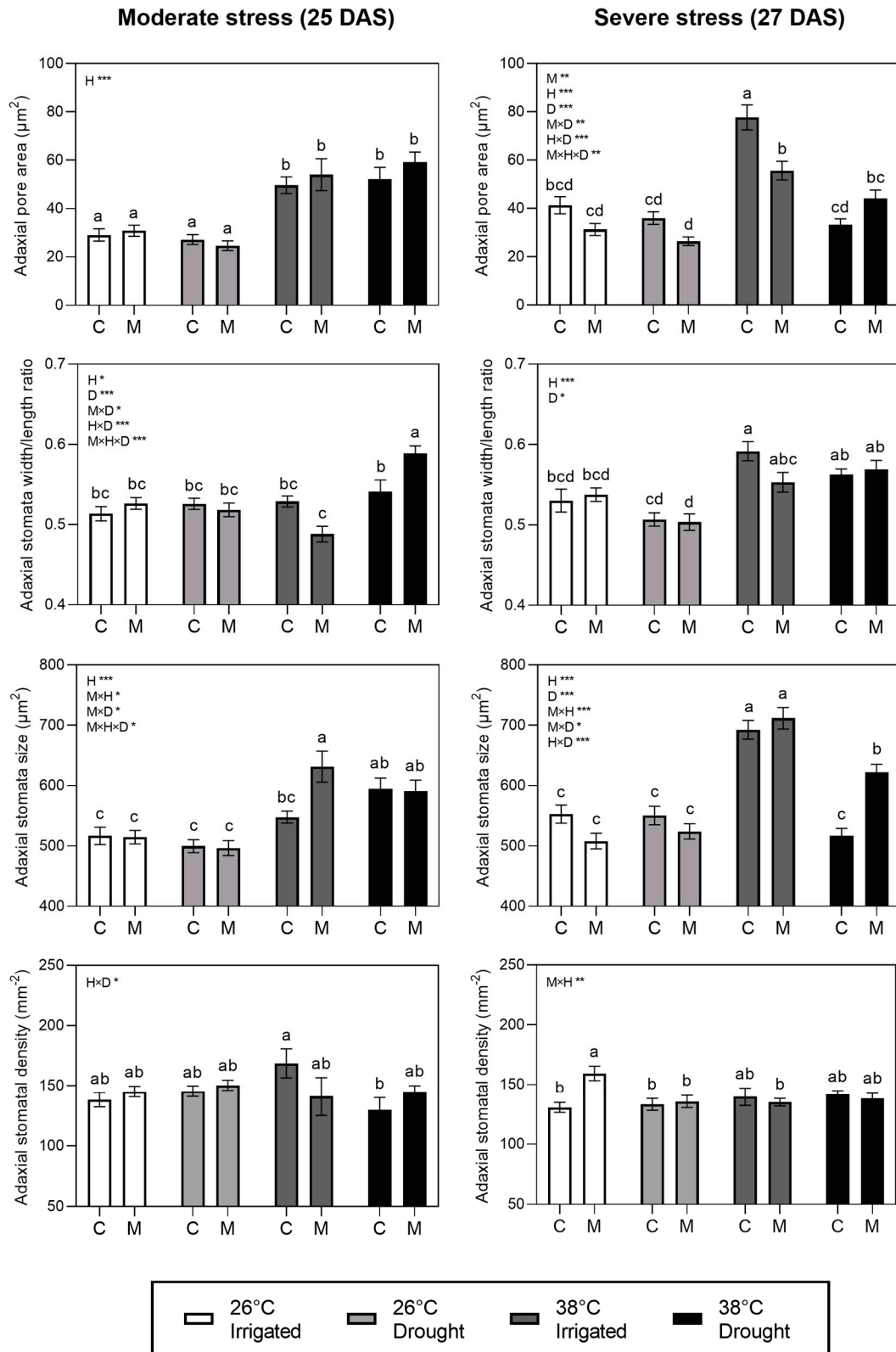
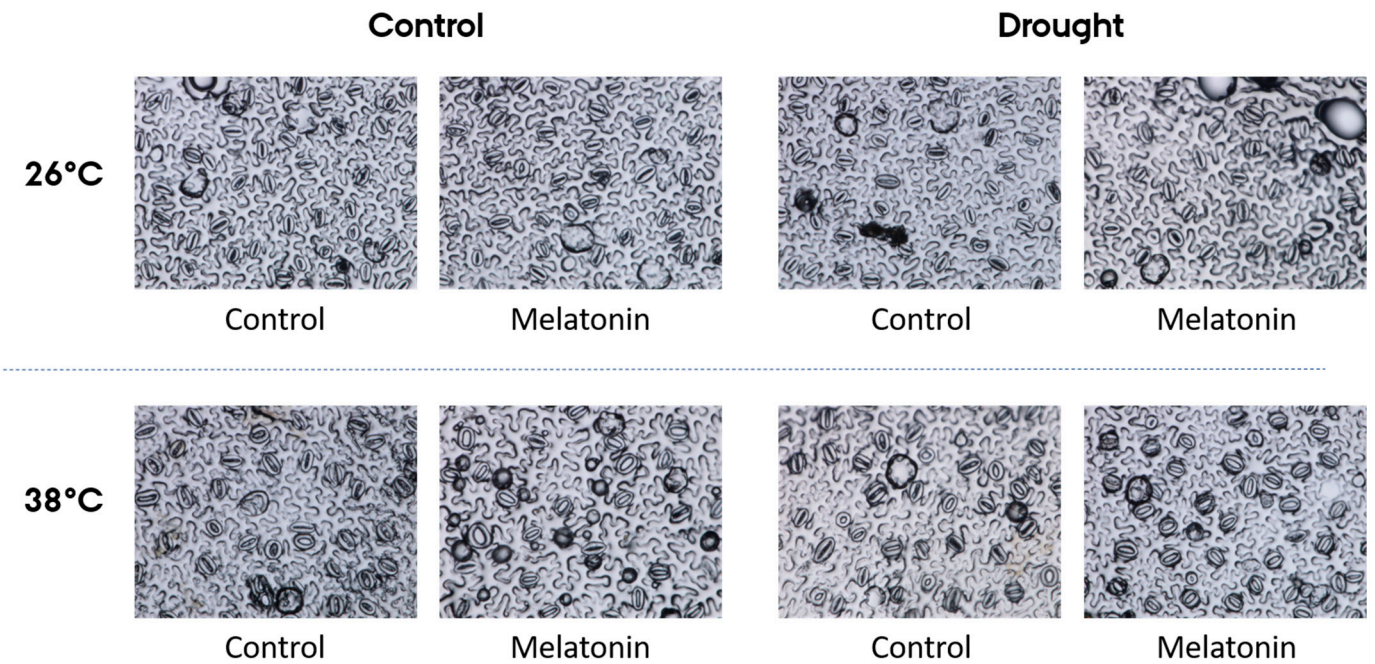


Figure S1. Stomatal anatomy from the adaxial leaf side on plants during moderate stress (drought stressed at SRWC ~50% and heat stress for 1 day) and severe stress (drought stressed at SRWC ~20% and heat stress for 3 days). Values are mean \pm SE. Letters indicates differences between groups within each stress level significant at $P < 0.05$ in the post hoc multiple comparisons.

MODERATE STRESS:



SEVERE STRESS:

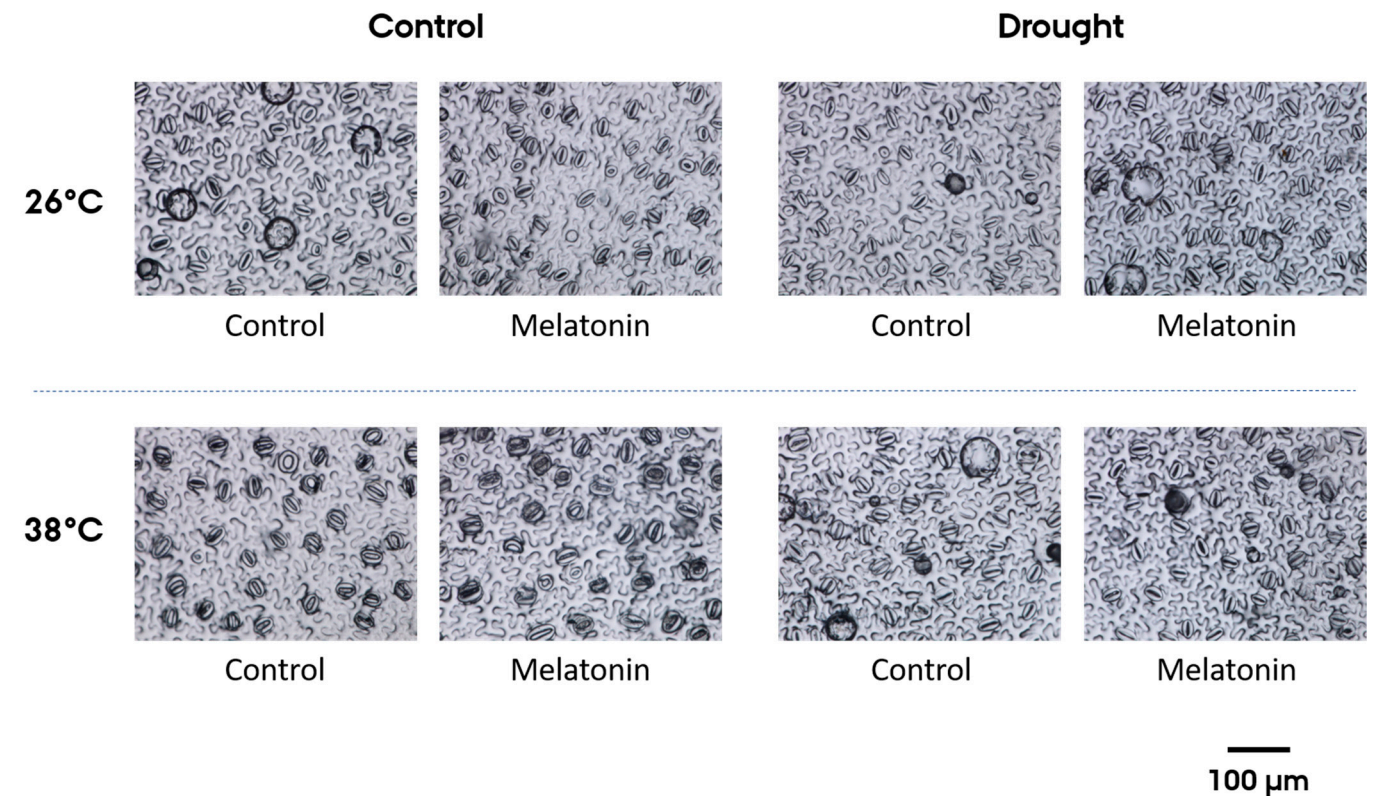
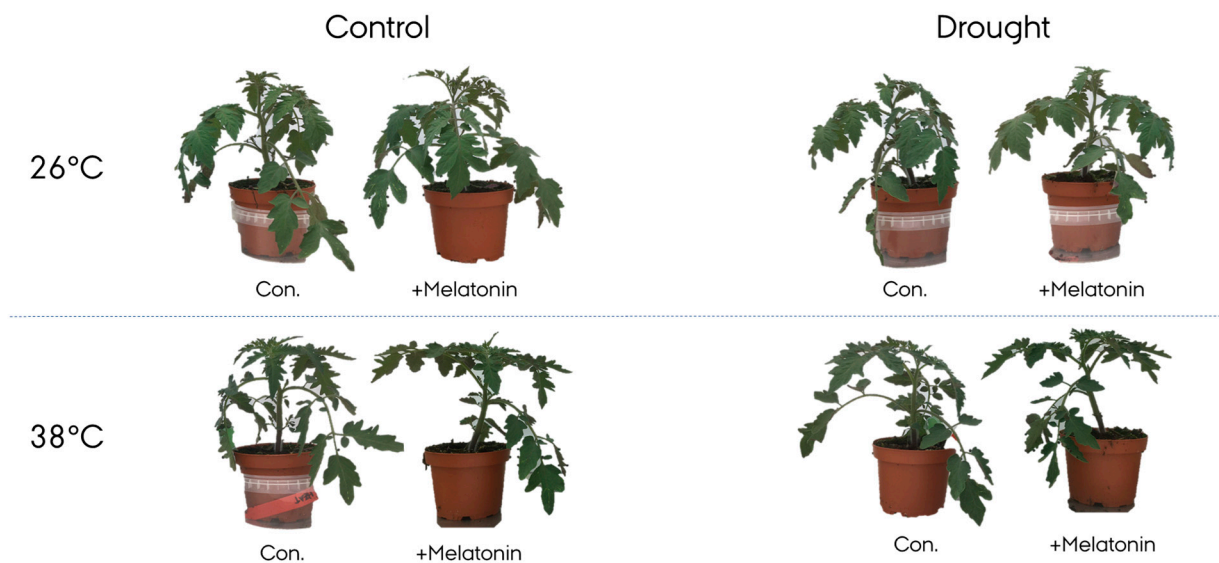


Figure S2. Uncropped microscope images for illustrating stomatal density

MODERATE STRESS:



SEVERE STRESS:

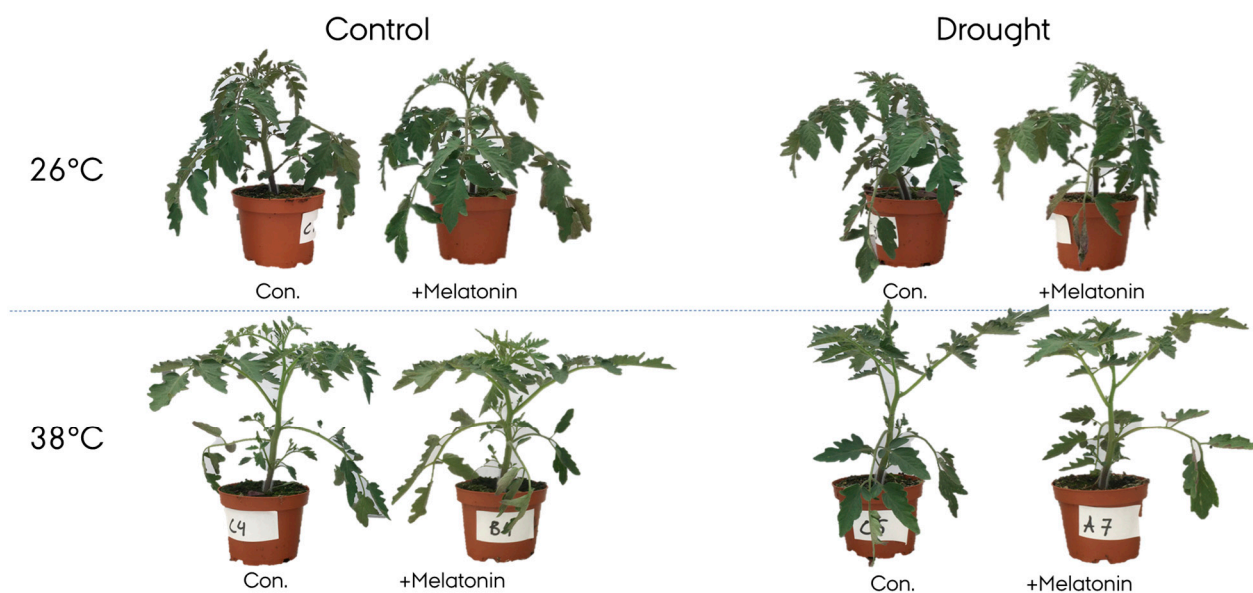


Figure S3. Plants photographed at the time of measuring/sampling (25 and 27 DAS)