

## Principal Component Analysis of Changes due to Water Stress for Some Osmolytes, Pigments and Antioxidant Enzymes in *Gmelina arborea* Robx. Leaves from Trees Planted in Northern Colombia

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### Climate

Figure S1 shows the maximum temperature ( $T_{\max}$ ) and rainfall pattern during the study period. Rainfall during September and October had similar, high values. The values recorded during November were because of La Niña. Rainfall became minimal during December and the dry season began in January.

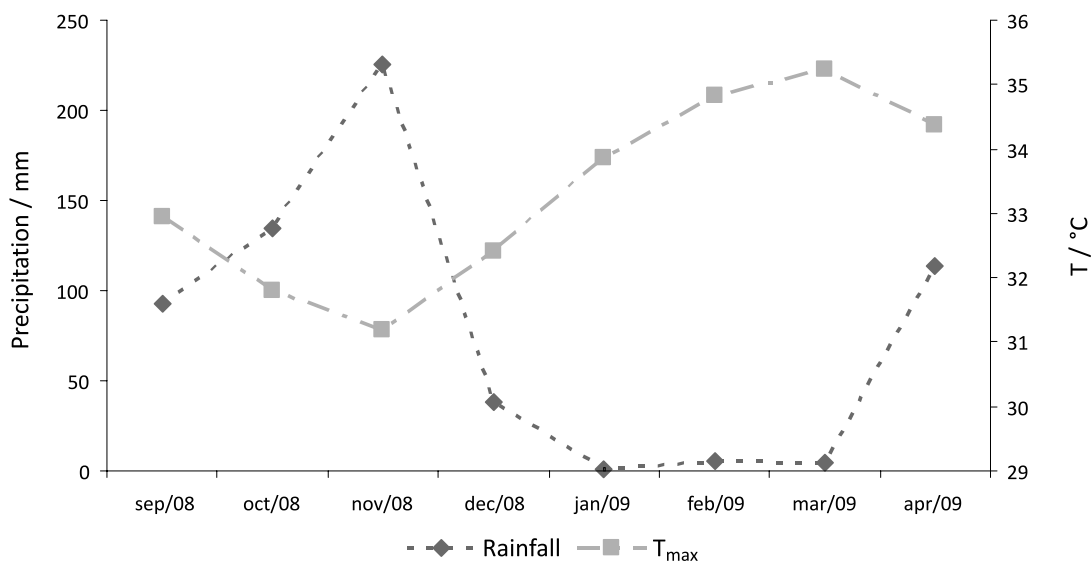


Figure S1. Average daily maximum temperature ( $T_{\max}$ ) and rainfall from September 2008 to April 2009.

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**Table S1.** Results for determining total (AZT) and reducing (AZR) sugars, total protein (PRT), chlorophyll A (ChIA), B (ChIB), total (ChIT) chlorophyll and carotenoids (CRT) in mg g<sup>-1</sup> plant material, proline (PRL) in µg g<sup>-1</sup> plant material, and enzyme activity for catalase CAT (µmol H<sub>2</sub>O<sub>2</sub> min<sup>-1</sup> mg<sup>-1</sup> protein), peroxidase POD (ΔA<sub>430nm</sub> min<sup>-1</sup> mg<sup>-1</sup> protein) and ascorbate peroxidase APX (nmol oxidized ascorbate min<sup>-1</sup> mg<sup>-1</sup> protein)<sup>a</sup>

Sample	Age	Season	time/h	AZT	AZR	PRL	ChIT	ChIA	ChIB	CRT	PRT	CAT	POD	APX
1	seedling	rainy	8	9.4 ± 0.3	3.8 ± 0.4	0.8 ± 0.2	5.7 ± 0.5	3.3 ± 0.3	2.4 ± 0.2	0.61 ± 0.05	1.4 ± 0.1	0.38 ± 0.07	0.32 ± 0.09	1.09 ± 0.03
2	seedling	rainy	10	8.5 ± 0.3	3.8 ± 0.5	0.8 ± 0.1	6.06 ± 0.04	3.3 ± 0.3	2.8 ± 0.3	0.58 ± 0.06	1.3 ± 0.2	0.32 ± 0.04	0.28 ± 0.04	1.21 ± 0.02
3	seedling	rainy	12	7.6 ± 0.2	3.8 ± 0.3	0.8 ± 0.1	5.8 ± 0.3	3.2 ± 0.1	2.5 ± 0.3	0.60 ± 0.04	1.5 ± 0.1	0.44 ± 0.03	0.28 ± 0.03	0.96 ± 0.03
4	seedling	trans. dry	8	9.2 ± 0.9	5.5 ± 0.3	1.5 ± 0.1	5.1 ± 0.2	2.9 ± 0.1	2.3 ± 0.2	0.89 ± 0.06	2.5 ± 0.3	0.9 ± 0.1	0.89 ± 0.05	1.7 ± 0.3
5	seedling	trans. dry	10	9.5 ± 0.3	5.5 ± 0.3	1.4 ± 0.2	4.8 ± 0.1	2.7 ± 0.2	2.11 ± 0.02	0.94 ± 0.05	2.6 ± 0.2	0.9 ± 0.1	0.82 ± 0.09	1.7 ± 0.3
6	seedling	trans. dry	12	9.4 ± 0.2	5.7 ± 0.3	1.3 ± 0.2	4.7 ± 0.3	2.6 ± 0.2	2.05 ± 0.07	0.76 ± 0.08	2.7 ± 0.1	1.0 ± 0.1	0.99 ± 0.08	1.46 ± 0.09
7	seedling	dry	8	12.56 ± 0.07	9.3 ± 0.6	4.3 ± 0.2	4.3 ± 0.1	2.4 ± 0.2	1.90 ± 0.07	1.3 ± 0.2	2.7 ± 0.4	1.6 ± 0.1	1.58 ± 0.05	3.6 ± 0.1
8	seedling	dry	10	11.9 ± 0.6	8.6 ± 0.5	4.3 ± 0.1	4.3 ± 0.2	2.5 ± 0.2	1.79 ± 0.06	1.4 ± 0.2	2.6 ± 0.1	1.5 ± 0.2	1.80 ± 0.08	3.16 ± 0.05
9	seedling	dry	12	12.6 ± 0.2	8.4 ± 0.2	4.2 ± 0.2	4.0 ± 0.3	2.3 ± 0.3	1.66 ± 0.03	1.4 ± 0.1	2.6 ± 0.3	1.5 ± 0.3	1.3 ± 0.1	3.6 ± 0.1
10	juvenile	rainy	8	12 ± 1	6.5 ± 0.3	0.40 ± 0.04	5.9 ± 0.3	3.5 ± 0.2	2.4 ± 0.2	0.36 ± 0.03	1.1 ± 0.1	0.26 ± 0.05	0.38 ± 0.02	0.58 ± 0.02
11	juvenile	rainy	10	12.0 ± 0.7	6.9 ± 0.5	0.5 ± 0.1	6.3 ± 0.1	3.78 ± 0.08	2.54 ± 0.06	0.36 ± 0.07	1.21 ± 0.08	0.30 ± 0.05	0.43 ± 0.03	0.71 ± 0.06
12	Juvenile	rainy	12	10.8 ± 0.6	6.6 ± 0.7	0.5 ± 0.1	6.4 ± 0.2	3.7 ± 0.1	2.7 ± 0.2	0.51 ± 0.04	1.3 ± 0.2	0.35 ± 0.05	0.38 ± 0.04	0.80 ± 0.01
13	juvenile	trans. dry	8	14.4 ± 0.2	9.6 ± 0.3	1.9 ± 0.2	4.0 ± 0.5	2.4 ± 0.3	1.6 ± 0.2	0.72 ± 0.08	1.8 ± 0.3	0.77 ± 0.05	0.8 ± 0.2	1.11 ± 0.08
14	juvenile	trans. dry	10	14.7 ± 0.9	9.6 ± 0.2	1.6 ± 0.3	3.7 ± 0.3	2.21 ± 0.06	1.5 ± 0.2	0.82 ± 0.06	1.4 ± 0.5	0.63 ± 0.09	0.93 ± 0.05	1.15 ± 0.08
15	juvenile	trans. dry	12	15.6 ± 0.4	9.7 ± 0.2	1.5 ± 0.1	4.5 ± 0.3	2.7 ± 0.1	1.7 ± 0.2	0.76 ± 0.04	1.5 ± 0.2	0.66 ± 0.09	1.01 ± 0.07	1.01 ± 0.05
16	juvenile	dry	8	15.5 ± 0.2	12.6 ± 0.3	3.4 ± 0.2	2.4 ± 0.1	1.53 ± 0.07	0.84 ± 0.06	1.17 ± 0.07	2.2 ± 0.2	1.2 ± 0.1	1.32 ± 0.08	2.46 ± 0.02
17	juvenile	dry	10	19 ± 3	13.6 ± 1	3.6 ± 0.2	2.4 ± 0.1	1.5 ± 0.1	0.87 ± 0.07	1.49 ± 0.09	2.6 ± 0.2	1.3 ± 0.2	1.23 ± 0.06	2.1 ± 0.4
18	juvenile	dry	12	18.8 ± 0.7	13 ± 1	3.5 ± 0.3	2.4 ± 0.1	1.53 ± 0.08	0.82 ± 0.05	1.19 ± 0.05	2.7 ± 0.2	1.2 ± 0.1	1.19 ± 0.07	1.6 ± 0.2
19	adult	rainy	8	8.5 ± 0.2	6.7 ± 0.2	0.52 ± 0.05	2.7 ± 0.1	1.76 ± 0.02	1.0 ± 0.2	0.55 ± 0.01	1.5 ± 0.1	0.47 ± 0.05	0.41 ± 0.03	0.43 ± 0.03
20	adult	rainy	10	8.6 ± 0.2	6.5 ± 0.1	0.44 ± 0.06	2.4 ± 0.3	1.7 ± 0.2	0.68 ± 0.05	0.8 ± 0.2	1.4 ± 0.2	0.56 ± 0.06	0.47 ± 0.03	0.6 ± 0.3
21	adult	rainy	12	7.6 ± 0.1	6.0 ± 0.3	0.55 ± 0.03	2.56 ± 0.05	1.89 ± 0.03	0.67 ± 0.02	0.8 ± 0.2	1.1 ± 0.1	0.58 ± 0.09	0.44 ± 0.05	0.6 ± 0.1
22	adult	trans. dry	8	11.6 ± 0.3	9.1 ± 0.3	2.65 ± 0.09	2.1 ± 0.1	1.31 ± 0.06	0.79 ± 0.05	0.97 ± 0.01	2.1 ± 0.1	1.31 ± 0.09	0.56 ± 0.01	0.8 ± 0.1
23	adult	trans. dry	10	12 ± 1	8.4 ± 0.5	2.5 ± 0.2	2.0 ± 0.2	1.19 ± 0.06	0.8 ± 0.2	0.8 ± 0.1	2.3 ± 0.2	1.5 ± 0.1	0.59 ± 0.08	1.06 ± 0.01
24	adult	trans. dry	12	12.7 ± 0.5	8.7 ± 0.7	2.4 ± 0.2	2.1 ± 0.2	1.22 ± 0.06	0.9 ± 0.2	0.8 ± 0.2	1.9 ± 0.6	1.4 ± 0.1	0.63 ± 0.09	0.96 ± 0.03
25	adult	dry	8	17.6 ± 0.6	15.3 ± 0.9	5.3 ± 0.1	1.2 ± 0.2	0.68 ± 0.06	0.5 ± 0.1	1.4 ± 0.2	1.6 ± 0.3	1.6 ± 0.1	2.0 ± 0.1	3.0 ± 0.2
26	adult	dry	10	17.6 ± 0.3	15.1 ± 0.9	5.3 ± 0.1	1.1 ± 0.2	0.7 ± 0.2	0.48 ± 0.04	1.22 ± 0.06	1.2 ± 0.1	1.93 ± 0.08	2.0 ± 0.2	3.8 ± 0.5
27	adult	dry	12	18 ± 1	13.7 ± 0.6	5.5 ± 0.2	1.15 ± 0.03	0.65 ± 0.04	0.50 ± 0.06	1.32 ± 0.06	1.2 ± 0.2	1.7 ± 0.2	1.8 ± 0.1	4.0 ± 0.6

<sup>a</sup>Average of three determinations ± S.D.