

Table S1. The effect of saline irrigation water and GABA application on chlorophyll (a and b) mg/g F.W and carotenoid content mg/g F.W of *Lavandula dentata* L. leaves during both growing seasons.

Treatments	Chlorophyll (a) (mg/g F.W)		Chlorophyll (b) (mg/g F.W)		Carotenoid content (mg/g F.W)	
	1 st Seas on	2 nd Season	1 st Season	2 nd Season	1 st Season	2 nd Season
Control (fresh water)	2.44a	1.66abc	0.69ab	0.66ab	0.69a	0.71a
Sea water at 1000 ppm	1.66b	1.53bc	0.46c	0.57c	0.36c	0.43c
Sea water at 2000 ppm	1.50b	1.44c	0.42c	0.49d	0.20de	0.27de
Sea water at 3000 ppm	1.31b	1.38c	0.45c	0.28f	0.13e	0.21e
1000 ppm sea water + 20 mM GABA	1.69b	1.67abc	0.70ab	0.62bc	0.49b	0.53b
1000 ppm sea water+ 40 mM GABA	1.54b	1.67abc	0.70ab	0.60bc	0.56b	0.61b
2000 ppm sea water+ 20 mM GABA	1.73b	1.80ab	0.72a	0.70a	0.24de	0.29de
2000 ppm sea water+ 40 mM GABA	2.64a	1.97a	0.57abc	0.66ab	0.28cd	0.32d
3000 ppm sea water+ 20 mM GABA	1.52b	1.43c	0.53bc	0.34ef	0.17de	0.24e
3000 ppm sea water+ 40 mM GABA	1.42b	1.47c	0.48c	0.39e	0.21de	0.24de

Means followed by the same letter at each column are not significantly different at the 5% level according to Duncan's multiple range test.

Table S2. The effect of saline irrigation water and GABA application on relative water content, proline, essential oil percentage, and oil yield of *Lavandula dentata* L. plants.

Treatments	Proline ($\mu\text{mol g}^{-1}$ F.W.)		Relative water content %		Oil percentage (%)		Oil yield (mL)	
	1 st Season	2 nd Season	1 st Season	2 nd Season	1 st Season	2 nd Season	1 st Season	2 nd Season
Control (fresh water)	0.045d	0.040e	69.06a	65.11a	2.67a	2.56a	0.65b	0.70b
Sea water at 1000 ppm	0.178c	0.170d	58.44 bc	55.00 bc	1.67e	1.73e	0.41d	0.47d
Sea water at 2000 ppm	0.266c	0.280cd	54.53 cd	50.88 cd	2.40c	2.29c	0.50c	0.52d
Sea water at 3000 ppm	0.502ab	0.499ab	45.49e	42.09e	1.67e	1.60f	0.27e	0.29e
1000 ppm sea water + 20 mM GABA	0.253c	0.249d	59.77bc	55.95 bc	2.17d	2.06d	0.56bc	0.60c
1000 ppm sea water + 40 mM GABA	0.254c	0.250d	60.95bc	57.03 abc	2.43bc	2.29c	0.63b	0.67b
2000 ppm sea water + 20 mM GABA	0.409b	0.400 bc	66.25ab	62.57 ab	2.60ab	2.50ab	0.76a	0.83a
2000 ppm sea water + 40 mM GABA	0.502ab	0.507ab	64.88ab	60.75 ab	2.57abc	2.48b	0.81a	0.85a
3000 ppm sea water + 20 mM GABA	0.550a	0.567a	50.70de	48.37 cde	1.30f	1.25g	0.23e	0.26e
2000 ppm sea water + 40 mM GABA	0.589a	0.580a	48.12de	46.18 de	1.67e	1.55f	0.27e	0.30e

Means followed by the same letter at each column are not significantly different at the 5% level according to Duncan's multiple range test.

Table S3. The effect of saline irrigation water and GABA application to peroxidase, catalase, and polyphenol activity of *Lavandula dentata* L. plants.

Treatments	Peroxidase activity		Catalase activity		Polyphenol activity	
	1 st Season	2 nd Season	1 st Season	2 nd Season	1 st Season	2 nd Season
Control (fresh water)	0.101 e	0.111 g	125.80 h	123.9 i	0.103e	0.101d
Sea water at 1000 ppm	0.116 d	0.125 f	251.00 g	244.6 h	0.106de	0.108cd
Sea water at 2000 ppm	0.147 b	0.158 c	999.74 c	980.67 c	0.114c	0.116b
Sea water at 3000 ppm	0.128 cd	0.139 e	935.25d	900.90d	0.111cd	0.110 bc
1000 ppm sea water + 20 mM GABA	0.128 cd	0.136 e	399.90 f	380.7 g	0.104e	0.104cd
1000 ppm sea water + 40 mM GABA	0.141 bc	0.152 d	402.70 f	420.3f	0.103e	0.104cd
2000 ppm sea water + 20 mM GABA	0.154 b	0.166 b	1585.10 a	1520 a	0.132a	0.129a
2000 ppm sea water + 40 mM GABA	0.168 a	0.175 a	1395.03 b	1400 b	0.125b	0.128a
3000 ppm sea water + 20 mM GABA	0.125 d	0.133 e	423.87e	421.43f	0.111cd	0.109bc
3000 ppm sea water + 40 mM GABA	0.129 cd	0.136 e	426.45e	430.09e	0.106de	0.109bc

Means followed by the same letter at each column are not significantly different at the 5% level according to Duncan's multiple range test.