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Optimisation of seed germination and seedling cultivation conditions for *Bruguiera gymnorrhiza* and *Acanthus ilicifolius* in a plant factory

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ELECTRONIC SUPPLEMENTARY MATERIAL (ESM)

The authors are fully responsible for both the content and the formal aspects of the electronic supplementary material. No editorial adjustments were made.

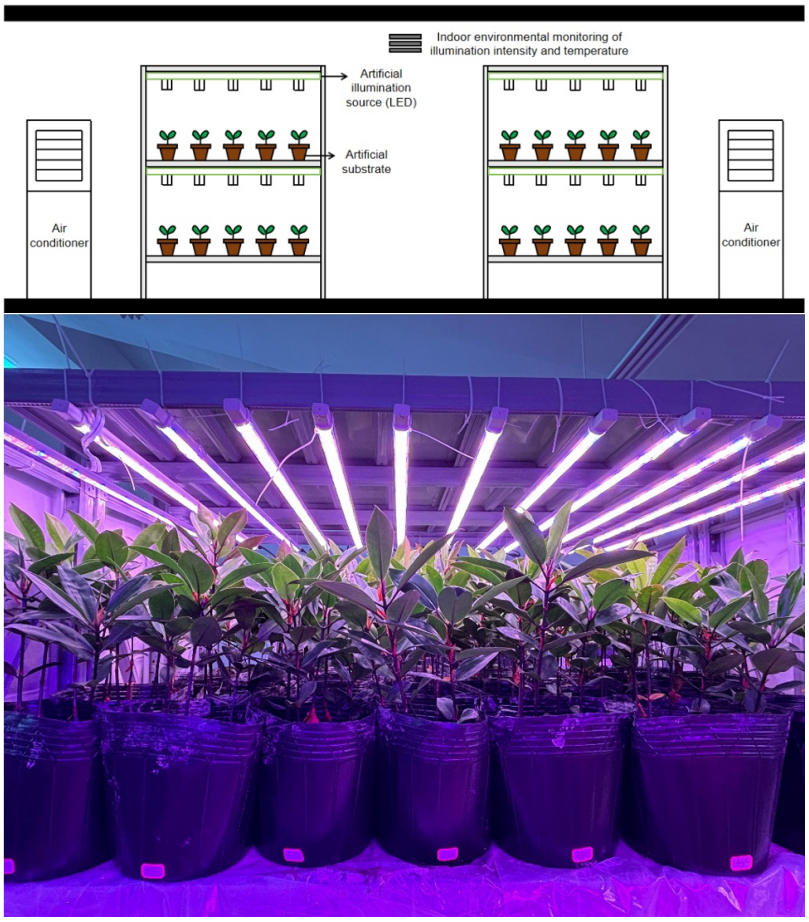

Figure S1. Schematic diagram and photo of the plant factory culture device

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Table S1. Formulations of Ca^{2+}/Mg^{2+} and trace elements in this study

Form	Nutrient solution ingredient	Concentration	Additive amount
Ca^{2+}/Mg^{2+}	$MgSO_4 \cdot 7H_2O$ (mg/kg substrate)	0 (0×), 30.81 (0.5×), 61.62 (1×), 123.24 (2×), 184.86 (3×)	–
	$CaCl_2$ (mg/kg substrate)	0 (0×), 27.75 (0.5×), 55.50 (1×), 111.00 (2×), 166.5 (3×)	
Trace element	H_3BO_3 (g/L)	0 (0×), 1.43 (0.5×), 2.860 (1×), 5.72 (2×), 8.58 (3×)	1 mL/kg substrate
	$MnSO_4$ (g/L)	0 (0×), 0.5075 (0.5×), 1.015 (1×), 2.03 (2×), 3.045 (3×)	
	$CuSO_4 \cdot 5H_2O$ (g/L)	0 (0×), 0.0395 (0.5×), 0.079 (1×), 0.158 (2×), 0.237 (3×)	
	$ZnSO_4 \cdot 7H_2O$ (g/L)	0 (0×), 0.110 (0.5×), 0.220 (1×), 0.440 (2×), 0.660 (3×)	
	H_2MoO_4 (g/L)	0 (0×), 0.045 (0.5×), 0.090 (1×), 0.180 (2×), 0.270 (3×)	
	$FeSO_4 \cdot 7H_2O$ (g/L)	0 (0×), 2.785 (0.5×), 5.57 (1×), 11.14 (2×), 16.71 (3×)	
	EDTA-Na_2 (g/L)	0 (0×), 3.725 (0.5×), 7.45 (1×), 14.9 (2×), 22.35 (3×)	

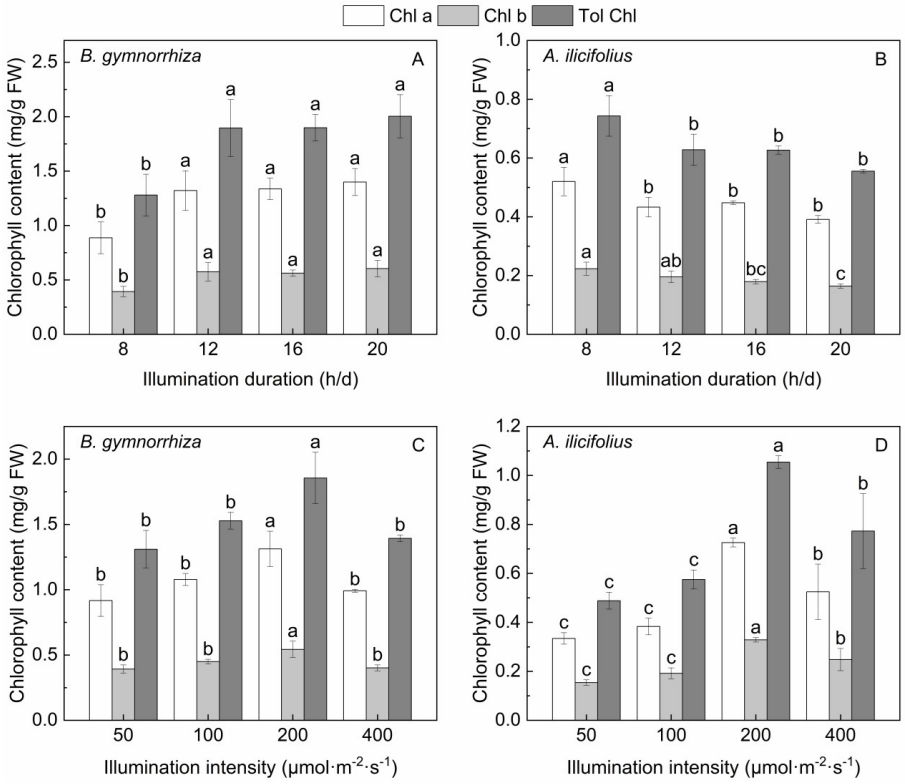

Figure S2. Chlorophyll *a*, *b* and total chlorophyll contents of *Bruguiera gymnorrhiza* and *Acanthus ilicifolius* seedlings under different illumination (A, B) durations and (C, D) intensities

[a,b,c]different letters indicate significant differences ($P < 0.05$)

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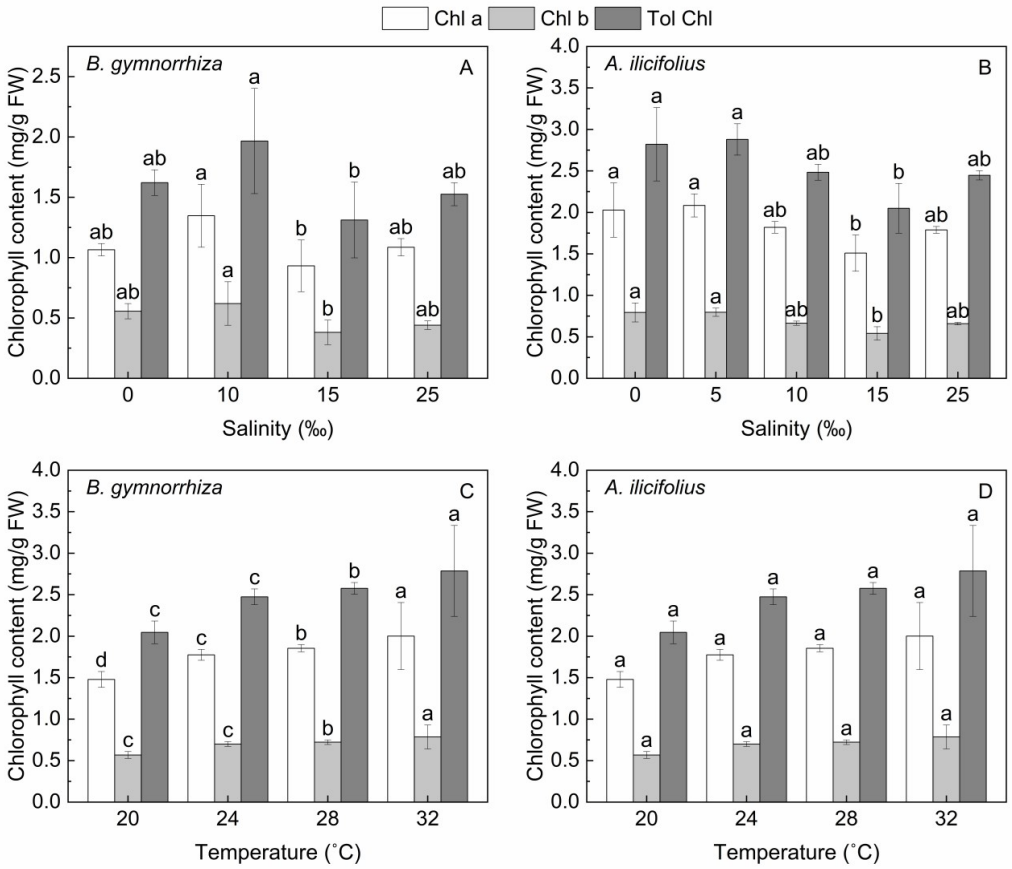

Figure S3. Chlorophyll *a*, *b* and total chlorophyll contents of *Bruguiera gymnorrhiza* and *Acanthus ilicifolius* seedlings under different (A, B) salinities and (C, D) temperatures

[a–d]different letters indicate significant differences ($P < 0.05$)

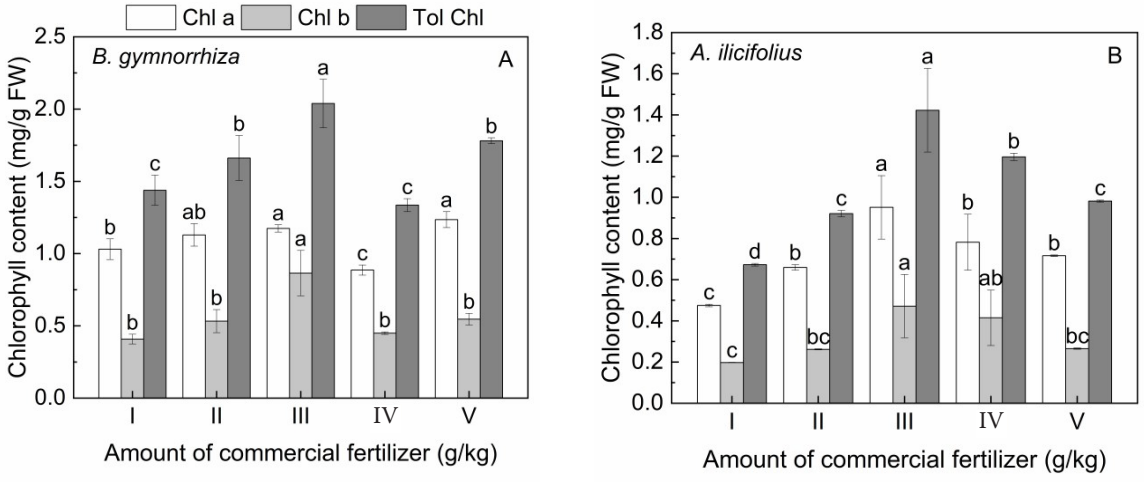

Figure S4. Chlorophyll *a*, *b* and total chlorophyll contents of *Bruguiera gymnorrhiza* and *Acanthus ilicifolius* seedlings under different additions of commercial fertiliser

I–V – different additive amounts of fertiliser for *B. gymnorrhiza* (0, 0.27, 0.53, 1.07 and 1.60 g/kg substrate of Stanley commercial fertiliser, respectively), and for *A. ilicifolius* (0, 2.70, 5.39, 10.77 and 21.54 g/kg substrate of Yuanlv commercial fertiliser, respectively)

[a–d]different letters indicate significant differences ($P < 0.05$)

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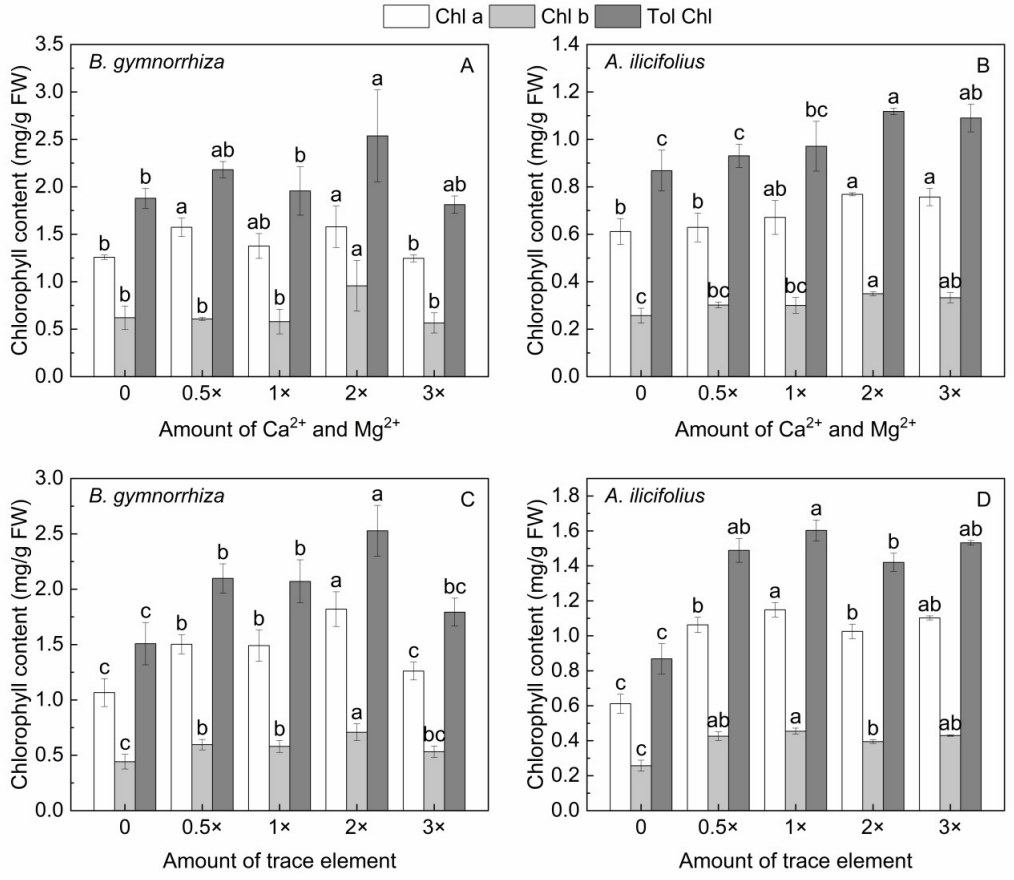

Figure S5. Chlorophyll *a*, *b* and total chlorophyll contents of *Bruguiera gymnorrhiza* and *Acanthus ilicifolius* seedlings under different additions of (A, B) Ca^{2+}/Mg^{2+} and (C, D) trace elements

[a,b,c]different letters indicate significant differences ($P < 0.05$)