

Supplementary material 1: Outputs of the statistical analyses

Decrease in concentration of nutrients in the synthetic aquaculture wastewater

Tests of Within-Subjects Effects					
	Interaction		df	F	p value
NH ₄ ⁺ -N	Plant Density * Day	Sphericity Assumed	12	8.859	0.000
		Greenhouse-Geisser	4.617	8.859	0.000
NO ₃ ⁻ -N	Plant Density * Day	Sphericity Assumed	12	2.423	0.007
		Greenhouse-Geisser	4.738	2.423	0.047

Supplementary Material - table 1. Output of the two-way repeated measures ANOVA used to compare the differences in the decrease in concentration of NH₄⁺-N and NO₃⁻-N in the synthetic aquaculture wastewater in different days of the experiment and in treatments with *Lemna gibba* present at different densities (20%, 40%, 60% and 80%). Df indicates the degree of freedom, F indicates the F value.

		NH ₄ -N			NO ₃ -N		
Plant Density		Mean Difference	Std. Error	p value	Mean Difference	Std. Error	p value
20%	40%	.570*	0.117	0.003	0.067	0.505	1.000
	60%	1.158*	0.074	0.000	2.615	0.960	0.119
	80%	1.434*	0.105	0.000	3.024*	0.745	0.011
40%	20%	-.570*	0.117	0.003	-0.067	0.505	1.000
	60%	.589*	0.135	0.007	2.548	1.095	0.241
	80%	.864*	0.162	0.001	2.956*	0.869	0.035
60%	20%	-1.158*	0.074	0.000	-2.615	0.960	0.119
	40%	-.589*	0.135	0.007	-2.548	1.095	0.241
	80%	0.276	0.100	0.111	0.409	0.758	1.000
80%	20%	-1.434*	0.105	0.000	-3.024*	0.745	0.011
	40%	-.864*	0.162	0.001	-2.956*	0.869	0.035
	60%	-0.276	0.100	0.111	-0.409	0.758	1.000

Supplementary Material - table 2. Output of the pairwise comparisons of the differences in the decrease in concentration of NH₄⁺-N and NO₃⁻-N in the synthetic aquaculture wastewater, among all the plant densities tested. The symbol * indicates significant differences.

Nutrients removal rate per m² of water surface and per m² of *Lemna gibba* covering the water surface

	Removal per m ² of water surface			Removal per m ² of <i>L. gibba</i> fronds covering the water surface		
	df	F	p value	df	F	p value
NH ₄ ⁺ -N	3	8.250	0.000	3	38.163	0.000
NO ₃ ⁻ -N	3	2.523	0.045	3	3.146	0.034
PO ₄ ³⁻ -P	-	-	-	3	7.026	0.001

Supplementary Material - table 3. Output of the ANOVA used to compare the differences in removal of NH₄⁺-N and NO₃⁻-N and PO₄³⁻-P from the synthetic aquaculture wastewater treated with *Lemna gibba* present at different densities (20%, 40%, 60% and 80%). The ANOVA was performed for the removal rate calculated per m² of water surface (with fronds of *L. gibba* present at different densities) and per m² of fronds *L. gibba* fronds covering the water surface. Results presented only for significant differences, df indicates the degree of freedom, F indicates the F value.

Removal per m ² of water surface covered by different densities of <i>L. gibba</i> frond							
		NH ₄ ⁺ -N			NO ₃ ⁻ -N		
Plant Density		Mean Difference	Std. Error	p value	Mean Difference	Std. Error	p value
20%	40%	-16.06481	12.48992	0.576	-33.77315	38.30408	0.814
	60%	-36.62037*	12.48992	0.026	-57.47685	38.30408	0.446
	80%	-58.49537*	12.48992	0.000	-102.38426*	38.30408	0.045
40%	20%	16.06481	12.48992	0.576	33.77315	38.30408	0.814
	60%	-20.55556	12.48992	0.364	-23.70370	38.30408	0.926
	80%	-42.43056*	12.48992	0.008	-68.61111	38.30408	0.291
60%	20%	36.62037*	12.48992	0.026	57.47685	38.30408	0.446
	40%	20.55556	12.48992	0.364	23.70370	38.30408	0.926
	80%	-21.87500	12.48992	0.310	-44.90741	38.30408	0.647
80%	20%	58.49537*	12.48992	0.000	102.38426*	38.30408	0.045
	40%	42.43056*	12.48992	0.008	68.61111	38.30408	0.291
	60%	21.87500	12.48992	0.310	44.90741	38.30408	0.647

Supplementary Material - table 4. Output of the pairwise comparisons of the removal rates of NH₄⁺-N and NO₃⁻-N from the synthetic aquaculture wastewater, treated with different plant densities and calculated per m² of water surface. The symbol * indicates significant differences.

Removal per sq m of <i>L. gibba</i> fronds covering the water surface										
		NH ₄ ⁺ -N			NO ₃ ⁻ -N			PO ₄ ³⁻ -P		
Plant Density		Mean Difference	Std. Error	p value	Mean Difference	Std. Error	p value	Mean Difference	Std. Error	p value
20%	40%	207.63889*	30.8381	0.000	174.59491	95.9532	0.278	87.26852*	24.4997	0.005
	60%	269.36728*	30.8381	0.000	249.57562	95.9532	0.059	87.34568*	24.4997	0.005
	80%	298.58218*	30.8381	0.000	260.56134*	95.9532	0.045	98.92940*	24.4993	0.001
40%	20%	-207.63889*	30.8381	0.000	-174.59491	95.9532	0.278	-87.26852*	24.4997	0.005
	60%	61.72840	30.8381	0.203	74.98071	95.9532	0.862	0.07716	24.4997	1.000
	80%	90.94329*	30.8381	0.025	85.96644	95.9532	0.807	11.66088	24.4997	0.964
60%	20%	-269.36728*	30.8381	0.000	-249.57562	95.9532	0.059	-87.34568*	24.4997	0.005
	40%	-61.72840	30.8381	0.203	-74.98071	95.9532	0.862	-0.07716	24.4997	1.000
	80%	29.21489	30.8381	0.780	10.98573	95.9532	0.999	11.58372	24.4997	0.965
80%	20%	-298.58218*	30.8381	0.000	-260.5614*	95.9532	0.045	-98.92940*	24.4997	0.001
	40%	-90.94329*	30.8381	0.025	-85.96644	95.9532	0.807	-11.66088	24.4997	0.964
	60%	-29.21489	30.8381	0.780	-10.98573	95.9532	0.999	-11.58372	24.4997	0.965

Supplementary Material - table 5. Output of the pairwise comparisons of the removal rates of NH₄⁺-N and NO₃⁻-N from the synthetic aquaculture wastewater, treated with plant densities and calculated per m² of *L. gibba* surface covering the water surface. The symbol * indicates significant differences.