

Supplementary Material




Glutamic-N,N-diacetic acid as an innovative chelating agent in microfertilizer development: biodegradability, lettuce growth promotion, and impact on endospheric bacterial communities

Table S1. Physicochemical characteristics of the soil used in the study.

Parameters		Values	
pH		5.86 ± 0,115	
EC (mS/cm)		117.47 ± 15,016	
Texture	Sand (%)	39,81 ± 0.95	Sand
	Silt (%)	4,63 ± 1.73	Silt
	Clay (%)	55,50 ± 1.78	Clay
TN %		1,63 ± 0.057	
TC %		2,31 ± 0.028	
P ₂ O ₅ mg/kg			
B mg/kg		1.0	Acid- soluble
Cu mg/kg		9.2	
Fe mg/kg		11941.7	
Mn mg/kg		57.5	
Mo mg/kg		-	
Zn mg/kg		29.5	
B mg/kg		0.24	Gross
Cu mg/kg		0.51	
Fe mg/kg		23.22	
Mn mg/kg		4.08	
Mo mg/kg		-	
Zn mg/kg		10.99	
Soil pH and EC were measured using an electrode method in a 1:10 (w/v) soil-water suspension. The fractions of sand, silt, and clay were determined using the pipette method and the soil was classified as clay according to the USDA textural classification. Heavy metals in soil were extracted using the US EPA 3050B method with HNO ₃ –H ₂ O ₂ digestion (US EPA, 1996) and measured using an atomic absorption spectrometer (ICPE-9000, Shimadzu) (“Summit Environmental Testing EPA METHOD 3050B,” n.d.). Before the experiment, the soil was moistened to 40% of the total soil moisture capacity and incubated for 10 days.			

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Table S2. Images of lettuce plant samples from above (grown hydroponically)

Samples	Replicates		
	№1	№2	№3
H-GLDA			

H-Cont			
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* Images of 3 replicates of the H-Cont sample are lost.

Table S3. Images of lettuce plant samples from the side (grown hydroponically)

Samples	Replicates		
	№1	№2	№3
H-GLDA			
H-Cont			

* Images of 3 replicates of the H-Cont sample are lost.

Table S4. Images of lettuce plant samples from above (grown on soil)










Samples	№1	№2	№3
S-Cont			
Sr-GLDA			
Sf-GLDA			

Table S5. Images of lettuce plant samples from the side (grown on soil)

Samples	№1	№2	№3
S-Cont			

Sr-GLDA			
Sf-GLDA			