

**Table S1:** Assessment of heavy metal concentrations in anerobic dairy digestate used as nutrient sources in hydroponics under controlled growth conditions. Values are mean of three replications  $\pm$  standard error.

Heavy metals	Quantity (mg kg <sup>-1</sup> dry weight)
Arsenic	<MDL (0.7)
Cadmium	0.25 $\pm$ 0.01
Chromium	6.74 $\pm$ 0.76
Cobalt	1.46 $\pm$ 0.10
Copper	618 $\pm$ 18.28
Lead	0.77 $\pm$ 0.07
Mercury	<MDL (0.02)
Molybdenum	5.36 $\pm$ 0.29
Nickle	9.02 $\pm$ 0.38
Selenium	2.64 $\pm$ 0.14
Zinc	438 $\pm$ 33.67

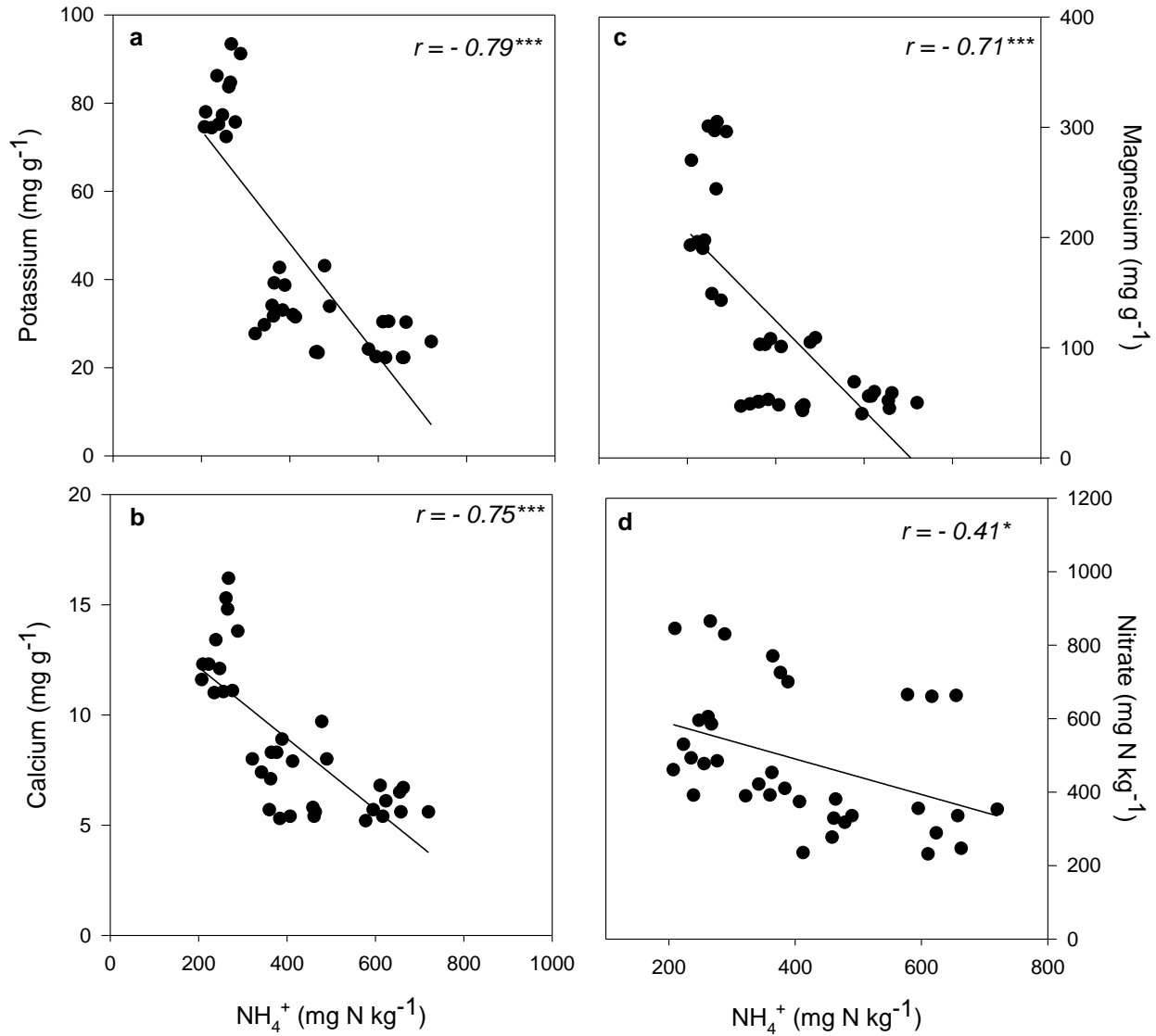
**Table S2:** Mineral analyses of undiluted anaerobic dairy digestate (AD) and three nutrient feed solutions used in current study including inorganic nutrient solution (NS), diluted liquid AD, mixture of inorganic nutrient solution and dairy digestate (50% AD + 50% NS). All values are mean  $\pm$  standard error for three analysis reports.

Characteristics	Undiluted AD	Three nutrient feed solutions		
		AD	AD+NS	NS
pH	8.33 $\pm$ 0.10	6.07 $\pm$ 0.03	5.97 $\pm$ 0.03	5.93 $\pm$ 0.03
EC (mS m <sup>-1</sup> )	11.14 $\pm$ 0.12	4.17 $\pm$ 0.03	3.69 $\pm$ 0.02	2.49 $\pm$ 0.01
mg L <sup>-1</sup>				
Nitrate (NO <sub>3</sub> <sup>-</sup> -N)	13.33 $\pm$ 1.59	10.86 $\pm$ 4.71	106.43 $\pm$ 51.11	200.33 $\pm$ 5.90
Ammonium (NH <sub>4</sub> <sup>+</sup> -N)	2383.33 $\pm$ 189.84	299.33 $\pm$ 53.82	151.67 $\pm$ 20.50	8.83 $\pm$ 0.41
Phosphorus (P)	543.33 $\pm$ 135.91	63.67 $\pm$ 13.86	29.00 $\pm$ 2.52	55.67 $\pm$ 2.03
Potassium (K)	2066.67 $\pm$ 239.21	243.33 $\pm$ 6.67	246.67 $\pm$ 28.48	381.33 $\pm$ 5.93
Calcium (Ca)	1296.67 $\pm$ 475.06	153.33 $\pm$ 33.83	156.67 $\pm$ 24.04	225.00 $\pm$ 2.89
Sulphur (S)	256.67 $\pm$ 58.12	32.00 $\pm$ 2.52	33.00 $\pm$ 4.93	103.00 $\pm$ 3.61
Magnesium (Mg)	546.67 $\pm$ 193.76	59.67 $\pm$ 16.19	26.33 $\pm$ 0.88	48.67 $\pm$ 1.20
Sodium (Na)	1266.67 $\pm$ 47.14	136.67 $\pm$ 8.82	89.33 $\pm$ 5.81	50.33 $\pm$ 4.26
Iron (Fe)	47.33 $\pm$ 18.46	6.00 $\pm$ 1.19	4.30 $\pm$ 0.84	5.70 $\pm$ 0.06
Copper (Cu)	16.03 $\pm$ 6.97	1.93 $\pm$ 0.48	0.56 $\pm$ 0.13	0.10 $\pm$ 0.00
Manganese (Mn)	10.97 $\pm$ 6.30	1.36 $\pm$ 0.47	0.85 $\pm$ 0.10	1.29 $\pm$ 0.21
Zinc (Zn)	17.33 $\pm$ 5.49	2.33 $\pm$ 0.32	1.09 $\pm$ 0.26	0.53 $\pm$ 0.03

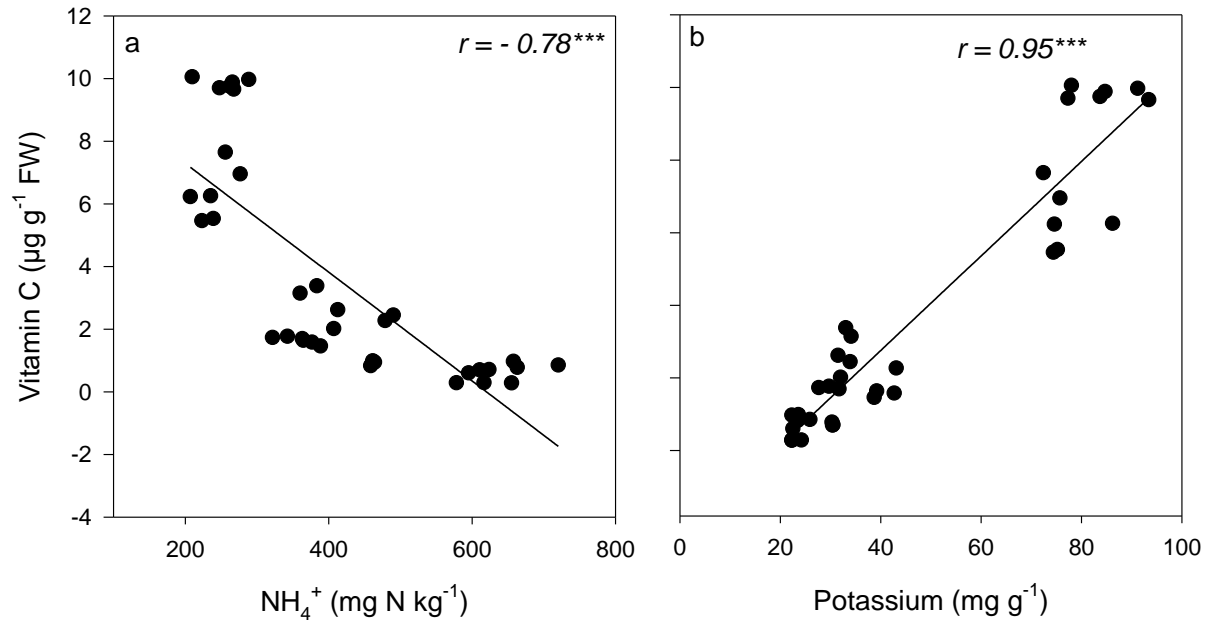
**Figure S1:** Effect of nutrient feed solutions on the growth of Newham (a) and Romaine (b) lettuce in floating hydroponic system in greenhouse settings. DD: dairy digestate; NS: inorganic nutrient solution; inorganic nutrient solution mix as NS+DD: 50% NS + 50% DD mixture.



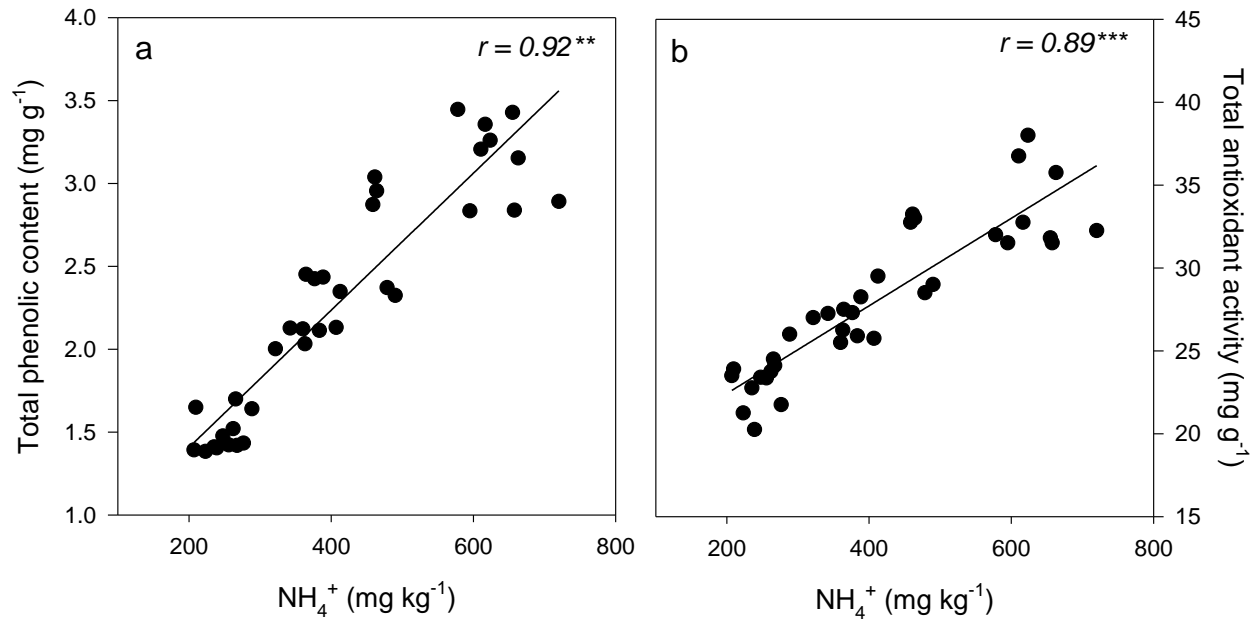
**Figure S2:** Pearson correlation showing relationship between potassium (a), calcium (b), and magnesium (c) and nitrate (d) with ammonium ( $\text{NH}_4^+$ ) concentrations in lettuce leaves grown with different nutrient feed solutions in hydroponics. \*, \*\*, \*\*\* represent significant differences at alpha 0.5, 0.01 and 0.001.



**Figure S3:** Pearson correlation showing the relationship between the vitamin C (a), potassium (b) with ammonium ( $\text{NH}_4^+$ ) concentrations in lettuce plants grown with different feed solutions in hydroponics. \*\*\* represent significant differences at alpha 0.001.



**Figure S4:** Pearson correlation showing the positive association between the ammonium ( $\text{NH}_4^+$ ) concentrations and total phenolic content (**a**), and total antioxidants (**b**) in lettuce plants grown with different feed solutions in hydroponics. \*\*, \*\*\* represent significant differences at alpha 0.01, and 0.001.



**Figure S5:** Pearson correlation showing positive association between the ammonium ( $\text{NH}_4^+$ ) and chicoric acid (a), chlorogenic acid (b), luteolin (c), quercetin-3-O- $\beta$ -D-glucuronide (d), quercetin-3-glucoside (e), and quercetin-3-O-(6''O-malonyl)- $\beta$ -glucoside (f) in lettuce plants grown with different feed solutions in hydroponics. \*, \*\* represent significant differences at alpha 0.5, and 0.01.

