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Nitrogen supply in combination of nitrate and ammonium enhances harnessing of elevated atmospheric CO_2 through improved nitrogen and carbon metabolism in wheat (*Triticum aestivum*)

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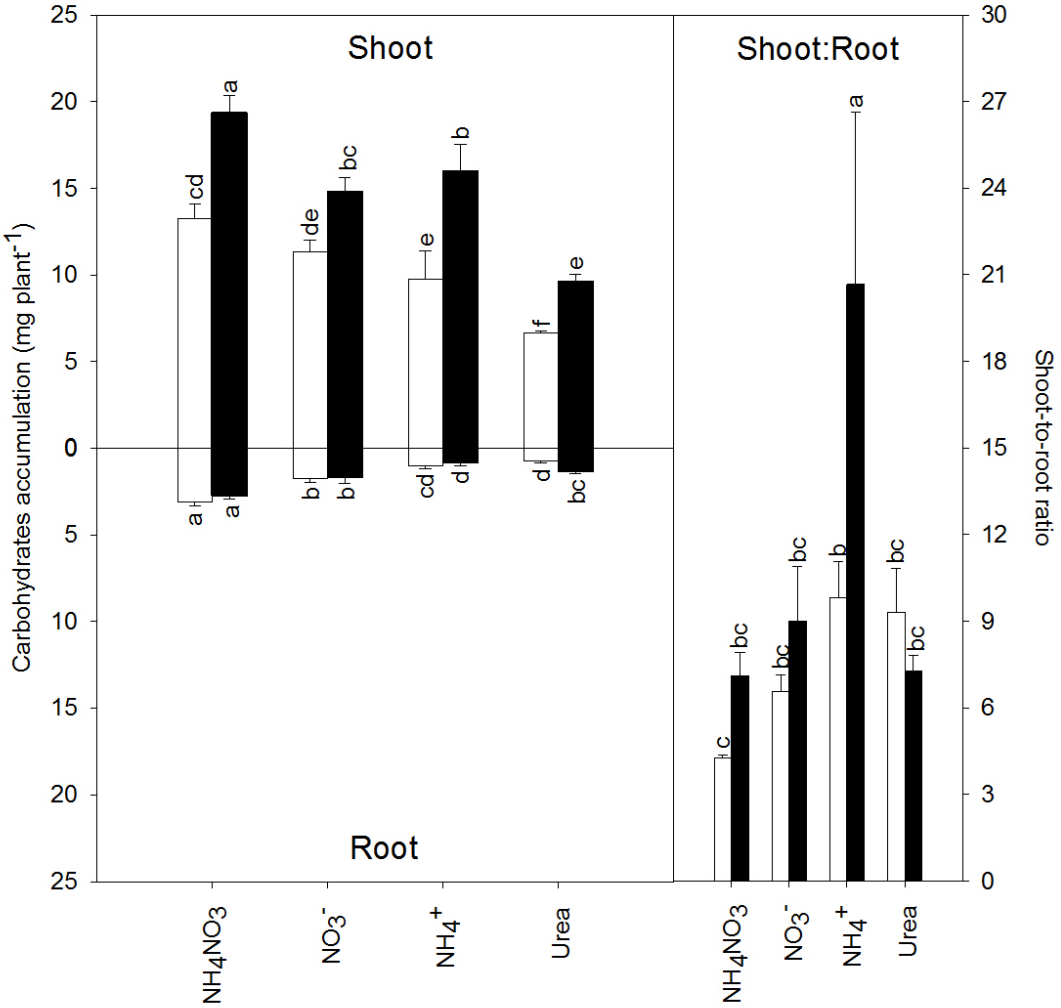
Supplementary Data

Table S1. Changes in gas exchange parameters (stomatal conductance and transpiration rate) in 23 days old bread wheat (*Triticum aestivum* L. cv. Ceyhan-99) plants grown in nutrient solution prepared by using NH_4^+, NO_3^-, NH_4^+ and NO_3^- or urea as the N source and under a-CO_2 ore-CO_2 conditions.

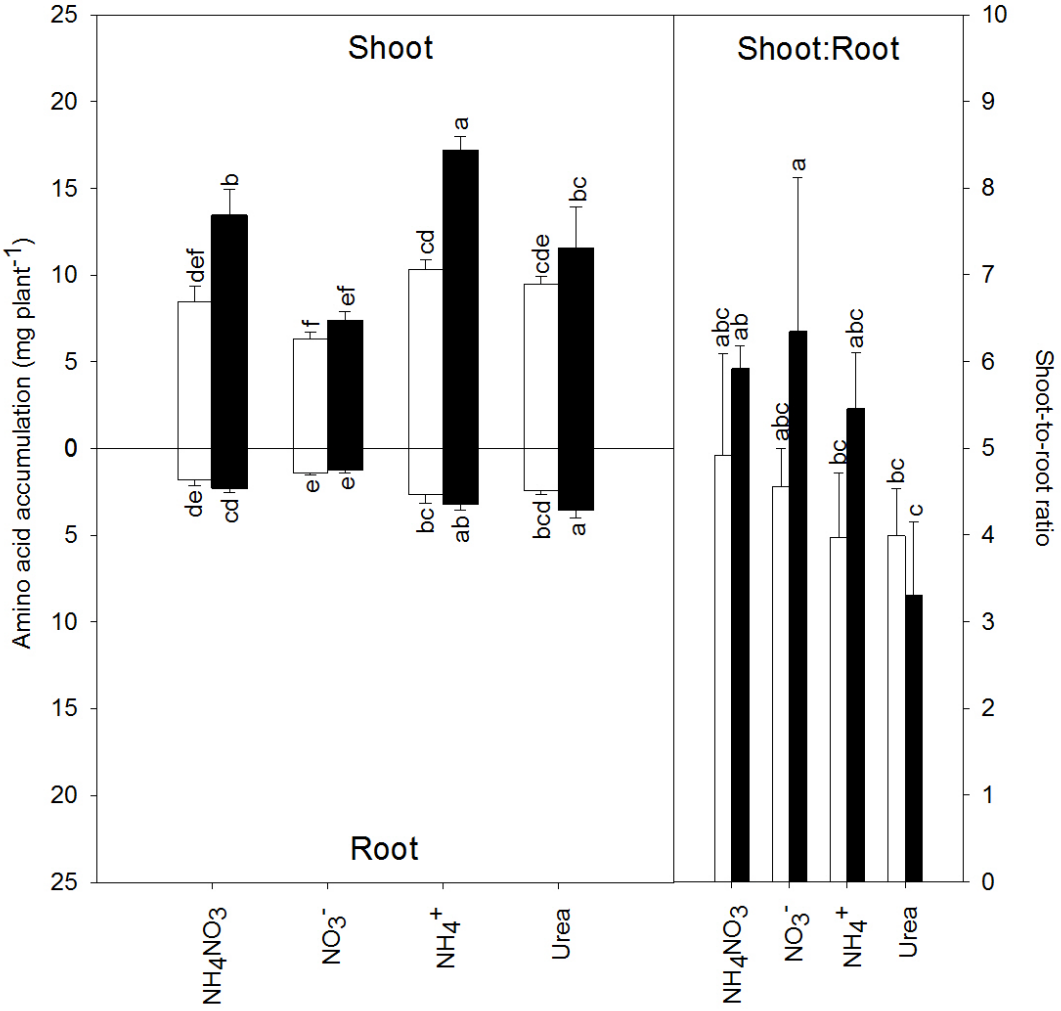
Values in parentheses indicate relative change by e-CO_2 from a-CO_2.

N source	Stomatal conductance					Transpiration rate				
	a-CO_2		e-CO_2		e-CO_2 effect	a-CO_2		e-CO_2		e-CO_2 effect
	(μmol m^{-2} s^{-1})				(%)	(mmol m^{-2} s^{-1})				(%)
NH_4NO_3	0.116	ab	0.113	ab	(-2.3)	2.92	a	2.39	a	(-17.9)
NO_3^-	0.135	a	0.127	ab	(-5.8)	3.03	a	2.85	a	(-5.8)
NH_4^+	0.102	ab	0.097	b	(-5.5)	2.29	a	2.06	a	(-10.1)
Urea	0.130	ab	0.105	ab	(-19.5)	2.93	a	2.24	a	(-23.5)
CO_2	n.s.					0.32*				
N source	0.020**					0.61*				
CO_2xN source	n.s.					n.s.				



Shoot carbohydrate accumulation HSD0.05 (CO_2, N source, CO_2 x N source) = (0.74***, 1.40***, 2.38**)
Root carbohydrate accumulation HSD0.05 (CO_2, N source, CO_2 x N source) = (n.s., 0.30***, 0.49**)
Shoot-to-root ratio of carbohydrate accumulation HSD0.05 (CO_2, N source, CO2 x N source) = (1.71***, 3.24***, 5.50***)

Supplementary Fig. S1. Carbohydrate accumulation in shoot, root and shoot-to-root ratio (carbohydrate accumulation) of 23 days old bread wheat (*Triticum aestivum* L. cv. Ceyhan-99) plants grown in hydroponic culture provided with different sources of N (NH_4NO_3, NO_3^-, NH_4^+ and urea) and under a-CO_2 (open bars) or e-CO_2 (solid bars) conditions.



Shoot amino acid accumulation HSD0.05 (CO_2, N source, CO_2 x N source) = (0.82***, 1.56***, 2.64***)
Root amino acid accumulation HSD0.05 (CO_2, N source, CO_2 x N source) = (0.25***, 0.48***, 0.81**)
Shoot-to-root ratio of amino acid accumulation HSD0.05 (CO_2, N source, CO2 x N source) = (0.67*, 1.27**, n.s.)

Supplementary Fig. S2. Amino acid accumulation in shoot, root and shoot-to-root ratio (amino acid accumulation) of 23 days old bread wheat (*Triticum aestivum* L. cv. Ceyhan-99) plants grown in hydroponic culture provided with different sources of N (NH_4NO_3, NO_3^-, NH_4^+ and urea) and under a-CO_2 (open bars) or e-CO_2 (solid bars) conditions.