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## Supplementary Material

### **Dynamic analysis of the impact of free-air CO<sub>2</sub> enrichment (FACE) on biomass and N uptake in two contrasting genotypes of rice**

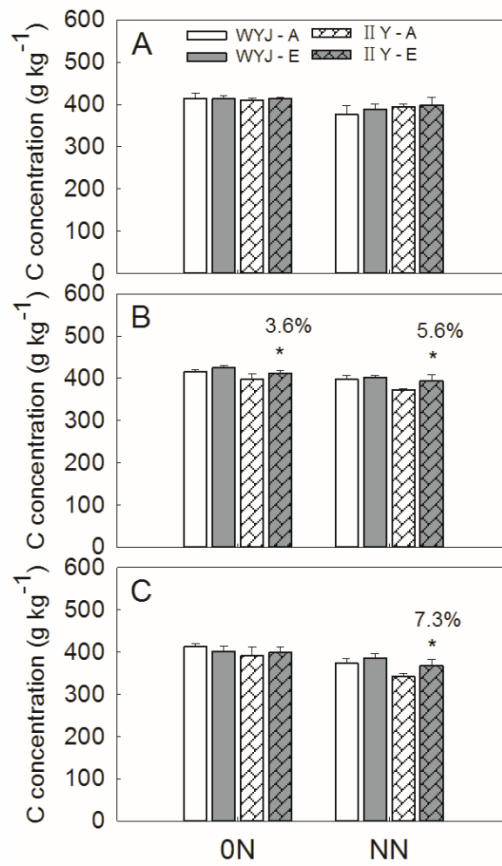
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**Fig. S1.** Root C concentration of rice genotypes WYJ and ILY under ambient (A) and elevated (E) [CO<sub>2</sub>], with (NN) or without (ON) added nitrogen. A, B and C show root carbon concentration at PI, heading and grain maturity stages. Asterisks indicate significant differences between two CO<sub>2</sub> treatments. The numbers are calculated as (E-A)/A. See Materials and Methods for additional details. \*\**P* < 0.01; \**P* < 0.05; bars are ±s.d.



**Table S2. The effect of elevated [CO<sub>2</sub>] on shoot and root C concentration for WYJ and IIY under two levels of N application (Stage 2, Stage 3 and Stage 5 mean separately root C concentration at PI, heading and grain maturity stages)**

n.s., \* and \*\* indicating no significance,  $P < 0.05$  and  $P < 0.01$ , respectively ( $n = 3$ )

N	Variety	[CO <sub>2</sub> ]	Root C concentration (g kg <sup>-1</sup> )		
			Stage 2	Stage 3	Stage 5
ON	WYJ	AMB	414.33	415.67	413.00
		FACE	413.00	425.00	402.00
		%Change	-0.32	2.24	-2.66
	IIY	AMB	410.67	397.67	391.33
		FACE	414.67	412.00	399.00
		%Change	0.97	3.60	1.96
NN	WYJ	AMB	376.33	398.00	373.67
		FACE	388.67	402.67	385.67
		%Change	3.28	1.17	3.21
	IIY	AMB	394.67	373.00	342.00
		FACE	398.67	394.00	367.00
		%Change	1.01	5.63	7.31
ANONA results					
[CO <sub>2</sub> ] (C)			n.s.	n.s.	n.s.
N			*	**	**
C × N			n.s.	n.s.	*
Variety (V)			n.s.	**	*
C × V			n.s.	n.s.	n.s.
N × V			n.s.	n.s.	n.s.
C × N × V			n.s.	n.s.	n.s.

**Table S3. Dynamic effect of elevated [CO<sub>2</sub>] on shoot and root N content for WYJ and ILY under two levels of N application (Stage 2, Stage 3 and Stage 5 mean separately shoot N content at PI, heading and grain maturity stages; Panicle means N content of panicles)**

n.s., \* and \*\* indicating no significance,  $P < 0.05$  and  $P < 0.01$ , respectively ( $n = 3$ )

N	Variety	[CO <sub>2</sub> ]	Shoot (g hill <sup>-1</sup> )				Root (g hill <sup>-1</sup> )		
			Stage 2	Stage 3	Stage 5	Panicle	Stage 2	Stage 3	Stage 5
ON	WYJ	AMB	0.30	0.31	0.33	0.25	0.029	0.028	0.032
		FACE	0.31	0.31	0.33	0.25	0.036	0.027	0.032
		%Change	3.33	0.00	0.00	0.00	24.48	-3.57	0.00
	IIY	AMB	0.32	0.41	0.48	0.39	0.034	0.023	0.023
		FACE	0.33	0.39	0.47	0.37	0.046	0.030	0.028
		%Change	3.13	-4.88	-2.08	-5.13	35.69	30.09	21.61
NN	WYJ	AMB	0.65	0.64	0.85	0.49	0.062	0.053	0.052
		FACE	0.75	0.65	0.89	0.56	0.066	0.057	0.058
		%Change	14.77	1.56	4.71	14.75	6.45	7.55	11.54
	IIY	AMB	0.56	0.61	0.89	0.59	0.045	0.032	0.046
		FACE	0.62	0.74	0.91	0.66	0.060	0.044	0.051
		%Change	10.71	21.08	2.25	11.02	33.33	36.47	10.87
ANONA results									
[CO <sub>2</sub> ] (C)			*	n.s.	n.s.	n.s.	**	**	*
N			**	**	**	**	**	**	**
C × N			n.s.	n.s.	n.s.	**	n.s.	n.s.	n.s.
Variety (V)			**	**	**	**	*	**	**
C × V			n.s.	n.s.	n.s.	n.s.	**	*	n.s.
N × V			**	n.s.	**	*	**	**	n.s.
C × N × V			n.s.	*	n.s.	n.s.	n.s.	n.s.	n.s.

