

**Supplementary Materials**

# <sup>15</sup>N Natural Abundance, Nitrogen and Carbon Pools in Soil-Sorghum System Amended with Natural and NH<sub>4</sub><sup>+</sup>-Enriched Zeolitites

**Table S1.** Average of N and C pools. SD within brackets. Significant ( $p < 0.05$ ) or non-significant differences ( $p > 0.05$ ) among the treatments at each sampling time were indicated by capital letters. "\*" and "x" symbols indicates the presence or the absence, respectively, of a significant difference among the variables for Treatments and Time in the experiment period and correlating treatments with time (Treatment\*Time).

Time	Treatment	TN soil g·kg <sup>-1</sup>	N-NO <sub>3</sub> <sup>-</sup> mg·kg <sup>-1</sup>	Exch N-NH <sub>4</sub> <sup>+</sup> mg·kg <sup>-1</sup>	Fix N- NH <sub>4</sub> <sup>+</sup> mg·kg <sup>-1</sup>	Nmic mg·kg <sup>-1</sup>	TOC g·kg <sup>-1</sup>	C/N	Cmic mg·kg <sup>-1</sup>
Nov-12	CNTR	2.65 (0.07) A	62.2 (3.1) B	50.2 (9.2) A	564 (26) B	8.6 (0.43) B	25.3 (1.2) B	9.55 (0.27) B	148 (7) C
	5NZ	2.60 (0.01) A	18.2 (0.9) A	48.1 (2.4) A	530 (13) AB	5.0 (0.25) A	24.7 (0.9) AB	9.51 (0.30) B	16.1 (0.8) A
	15NZ	2.71 (0.09) A	12.3 (0.6) A	43.7 (2.2) A	490 (33) A	5.3 (0.26) A	27.3 (0.1) B	10.1 (0.3) B	98.5 (5.0) B
	7CZ	2.77 (0.35) A	67.0 (3.4) B	138.0 (7.0) B	520 (4) AB	14.0 (9.0) C	20.7 (1.9) A	7.49 (0.25) A	43.2 (36.9) AB
May-2013	CNTR	2.42 (0.03) A	12.4 (0.6) D	47.4 (2.4) A	468 (22) A	40.3 (0.8) C	24.6 (0.3) A	10.2 (0.03) A	333 (27) B
	5NZ	2.66 (0.07) A	8.12 (0.41) C	48.1 (2.4) A	475 (13) A	25.7 (6.2) B	25.8 (0.04) A	9.73 (0.23) A	319 (46) B
	15NZ	1.68 (0.80) A	2.74 (0.14) A	43.1 (2.2) A	497 (7) A	13.0 (0.9) A	22.0 (3.5) A	14.2 (4.7) A	165 (12) A
	7CZ	1.98 (0.09) A	4.57 (0.23) B	49.0 (2.5) A	490 (10) A	29.1 (3.2) B	19.2 (0.1) A	9.67 (0.50) A	303 (14) B
Jun-2013	CNTR	2.04 (0.23) A	58.0 (2.9) C	54.2 (16.6) A	468 (21) B	7.2 (6.2) B	19.7 (2.1) AB	9.68 (0.14) A	145 (2) A
	5NZ	2.16 (0.04) A	18.9 (1.0) A	42.9 (2.2) A	513 (0.4) B	5.5 (6.2) B	20.3 (0.6) AB	9.41 (0.44) A	179 (17) A
	15NZ	1.83 (0.06) A	14.7 (0.7) A	43.9 (6.8) A	403 (12) A	1.7 (1.0) A	17.6 (1.0) A	9.61 (0.19) A	139 (6) A
	7CZ	2.42 (0.07) A	36.7 (1.8) B	51.6 (13.1) A	501 (7) B	5.6 (6.9) B	23.4 (1.3) B	9.69 (0.25) A	134 (43) A
Sep-2013 Bulk	CNTR	2.13 (0.03) A	25.3 (1.3) A	63.6 (3.2) B	531 (1) A	12.3 (2.1) C	20.6 (1.4) A	9.68 (0.51) A	256 (9) A
	5NZ	2.47 (0.07) A	40.9 (2.1) C	83.8 (4.2) C	566 (46) A	6.2 (1.3) B	23.1 (0.3) A	9.33 (0.38) A	239 (11) A
	15NZ	2.43 (0.12) A	32.6 (1.6) B	50.9 (2.5) A	540 (2) A	2.5 (0.3) A	23.2 (0.4) A	9.58 (0.31) A	235 (12) A
	7CZ	2.32 (0.13) A	29.1 (1.5) AB	54.0 (2.7) A	598 (59) A	6.9 (1.2) B	22.8 (1.1) A	9.81 (0.08) A	241 (9) A
Sep-2013 Rhizo	CNTR	2.58 (0.10) A	37.0 (1.9) BC	47.1 (2.4) B	549 (28) A	35.7 (3.8) B	25.8 (2.4) A	9.98 (0.6) A	361 (30) AB
	5NZ	2.83 (0.13) A	33.8 (1.7) B	58.0 (2.9) C	575 (23) A	17.9 (11.6) A	29.1 (2.2) AB	10.3 (0.4) A	329 (40) A
	15NZ	2.88 (0.20) A	24.2 (1.2) A	35.0 (1.8) A	547 (43) A	19.8 (4.6) A	31.5 (2.6) B	11.0 (0.8) A	432 (3) B
	7CZ	2.80 (0.04) A	40.7 (2.0) C	55.1 (2.8) C	623 (143) A	24.5 (9.4) A	28.1 (0.3) AB	10.0 (0.03) A	388 (48) AB
	Treatment	x	*	*	*	*	*	*	*
	Time	*	*	*	*	*	*	*	*
	Treatment*Time	*	*	*	x	*	*	*	*

**Table S2.** Average of TN, TOC and C/N of sorghum organs. SD within brackets. Significant ( $p < 0.05$ ) or non-significant ( $p > 0.05$ ) differences between treatments are indicated by capital letters.

Plant organ	Treatment	TN	TOC	C/N
		$\text{g}\cdot\text{kg}^{-1}$	$\text{g}\cdot\text{kg}^{-1}$	
Roots	CNTR	13.3 (4.2) A	422 (12) A	31.8 (7.1) A
	5NZ	11.4 (2.6) A	419 (5) A	37.8 (9.0) A
	15NZ	9.40 (0.72) A	420 (8) A	45.1 (3.8) A
	7CZ	13.6 (1.6) A	413 (6) A	30.7 (4.2) A
Stems	CNTR	8.01 (3.27) A	414 (8) A	50.6 (6.1) A
	5NZ	10.4 (3.1) A	412 (5) A	41.5 (12.0) A
	15NZ	6.75 (1.31) A	401 (9) A	61.2 (9.3) A
	7CZ	6.17 (0.59) A	403 (5) A	66.2 (6.5) A
Leaves	CNTR	24.4 (2.2) A	414 (15) A	17.3 (5.7) A
	5NZ	25.1 (1.8) A	424 (1) A	16.9 (1.2) A
	15NZ	18.8 (5.1) A	433 (13) A	23.2 (5.7) A
	7CZ	23.1 (1.1) A	408 (7) A	17.5 (1.0) A
Panicles	CNTR	19.5 (6.5) A	429 (6) A	22.0 (4.2) A
	5NZ	21.2 (3.2) A	430 (1) A	20.6 (3.0) A
	15NZ	18.0 (1.2) A	423 (1) A	23.9 (1.8) A
	7CZ	20.9 (2.1) A	431 (2) A	20.7 (2.3) A