

**Additional file 8.** Metabolic profile of other compounds that presented significant changes in leaves and roots of rice plants subjected to different nitrate treatments. Fold change (ratio of means) are shown. Colored cells (red=increase; green=decrease) indicate significant change for the indicated t-test ( $p < 0.05$ ).

Compound	Pathway	Leaf			Root		
		HN/LN	LN-HN / LN	HN-LN / HN	HN/LN	LN-HN / LN	HN-LN / HN
Gama amino-butyrate	Glutamate metabolism	2.33	0.73	1.05	1.75	0.53	0.95
Glutathione oxidized (GSSG)	Glutathione metabolism	3.97	2.38	1.83	2.40	0.87	0.69
5-oxoproline		1.55	0.80	1.97	0.61	1.40	1.71
2-aminoadipate	Lysine metabolism	2.81	1.09	2.91	1.43	1.07	1.07
N6-acetyllysine		1.24	0.65	1.17	1.73	0.68	0.73
Quinate	Phenylalanine and tyrosine metabolism	4.24	1.27	1.02	2.60	0.84	0.70
Putrescine	Polyamine metabolism	1.21	0.96	2.72	1.66	0.53	1.17
1-kestose	Fructose, mannose, galactose, starch and sucrose metabolism	1.73	0.93	0.65	1.22	0.91	0.74
erythritol		1.52	0.89	1.70	1.11	1.00	1.06
Fructose		0.89	0.83	0.84	1.54	0.71	0.97
Galactose		1.76	0.79	0.91	1.15	0.68	1.04
Raffinose		1.00	1.43	1.35	0.95	0.78	0.62
Sucrose		2.23	1.40	0.94	0.21	0.86	0.63
Trehalose		2.76	1.03	0.78	1.30	0.81	0.70
Fructose-6-P		Glycolysis, gluconeogenesis, pyruvate metabolism	1.82	0.91	0.88	1.71	1.43
Glucose	0.93		0.89	0.97	1.02	1.45	1.35
Glucose-6-P	1.88		0.94	0.83	1.35	1.77	1.77
Glycerate	2.01		1.07	0.72	1.04	1.52	1.48
Pyruvate	2.21		0.80	0.70	0.78	0.84	0.81
Gluconate	Nucleotide sugars, pentose metabolism	2.84	0.72	0.77	2.17	2.63	2.79
Ribose		1.12	0.75	1.25	1.74	1.99	1.97
Ribulose		2.99	0.62	0.63	0.93	1.71	1.25
Xylose		1.10	0.92	0.86	2.05	3.11	2.41
Threonate	Ascorbate and aldarate metabolism	0.53	0.75	1.75	1.79	2.43	2.76
Nicotinamide ribonucleotide (NMN)	Nicotinate and nicotinamide metabolism	0.95	2.03	4.41	1.00	1.00	1.00

**Additional file 8.** (continued)

Cis-aconitate	Krebs cycle	4.59	1.12	2.34	2.19	0.94	1.09
Citrate		1.62	1.19	1.57	1.94	0.82	1.26
Isocitrate		0.53	0.90	2.64	1.86	0.76	0.97
Malate		1.37	1.00	1.37	3.43	0.81	1.08
succinate		0.72	0.93	1.73	1.44	1.10	0.88
Glycerol	Glycerolipid metabolism	1.53	1.01	1.13	1.45	0.95	1.08
Glycerol-3-P		1.63	1.05	0.95	2.55	0.97	1.01
Phosphoethanolamine		1.33	0.96	0.85	2.14	0.55	0.86
Myo-inositol	Inositol metabolism	3.72	1.08	0.80	1.09	0.72	1.02
2',3'-cUMP	Pyrimidine metabolism	0.48	0.58	1.47	2.09	0.99	1.09
Alanylglycine	Dipeptide	7.69	1.02	1.23	0.72	0.58	1.92
Alanylisoleucine		2.29	0.82	0.80	1.30	0.90	1.31
Alanylleucine		2.01	0.76	0.94	1.00	0.64	1.18
Alanylvaline		2.82	1.07	0.81	1.32	0.87	1.06
Glycylleucine		2.52	0.81	0.67	1.00	0.69	1.09
$\gamma$ -Glutamylglutamine		2.61	1.29	5.54	1.58	1.14	1.12
Apigenin	Flavonoid	6.98	0.96	5.84	1.00	1.00	1.00
Quercetin-3-galactoside		0.20	1.20	1.76	1.00	1.00	1.00
Luteolin-7-o-glucoside		0.51	1.08	1.47	1.00	1.00	1.00
Ferulate	Phenylpropanoid	1.64	0.97	0.90	0.46	0.73	1.11