

Table 1: Influence of increasing concentrations of As(V) with or without Si and Se on pyruvic acid, citric acid, succinic acid and malic acid contents in 3 weeks old rice seedlings. Different letterings are used to indicate statistically significant treatments differences, at 5% level of significance, for both roots and shoots separately.

Treatments	Pyruvic acid (mg g ⁻¹ FW)		Citric acid (mg g ⁻¹ FW)		Succinic acid (mg g ⁻¹ FW)		Malic acid (mg g ⁻¹ FW)	
	Root	Shoot	Root	Shoot	Root	Shoot	Root	Shoot
Control	0.13 ± 0.015 ^a	0.09 ± 0.010 ^a	0.22 ± 0.007 ^a	0.10 ± 0.003 ^a	0.15 ± 0.039 ^a	0.35 ± 0.005 ^a	0.45 ± 0.003 ^a	0.29 ± 0.020 ^a
25 µM As(V)	0.18 ± 0.017 ^b	0.11 ± 0.016 ^b	0.28 ± 0.010 ^b	0.11 ± 0.014 ^b	0.24 ± 0.064 ^b	0.53 ± 0.013 ^b	0.60 ± 0.011 ^b	0.35 ± 0.038 ^b
50 µM As(V)	0.19 ± 0.013 ^b	0.13 ± 0.008 ^b	0.31 ± 0.009 ^b	0.13 ± 0.013 ^b	0.26 ± 0.025 ^b	0.56 ± 0.012 ^b	0.65 ± 0.023 ^b	0.38 ± 0.001 ^b
75 µM As(V)	0.20 ± 0.006 ^b	0.14 ± 0.017 ^b	0.32 ± 0.004 ^b	0.15 ± 0.022 ^b	0.27 ± 0.024 ^b	0.58 ± 0.019 ^b	0.68 ± 0.010 ^b	0.42 ± 0.019 ^b
2 mM Si	0.15 ± 0.002 ^a	0.11 ± 0.005 ^a	0.24 ± 0.003 ^a	0.10 ± 0.017 ^a	0.18 ± 0.034 ^a	0.40 ± 0.023 ^a	0.48 ± 0.038 ^a	0.32 ± 0.020 ^a
+ 25 µM As(V)	0.22 ± 0.008 ^a	0.12 ± 0.008 ^a	0.34 ± 0.005 ^c	0.15 ± 0.017 ^a	0.26 ± 0.018 ^a	0.58 ± 0.016 ^a	0.71 ± 0.013 ^a	0.44 ± 0.023 ^a
+ 50 µM As(V)	0.24 ± 0.008 ^a	0.15 ± 0.009 ^a	0.40 ± 0.014 ^a	0.16 ± 0.012 ^a	0.29 ± 0.021 ^a	0.62 ± 0.010 ^a	0.77 ± 0.024 ^a	0.47 ± 0.029 ^a
+ 75 µM As(V)	0.25 ± 0.007 ^c	0.16 ± 0.009 ^c	0.42 ± 0.027 ^d	0.17 ± 0.012 ^c	0.30 ± 0.015 ^c	0.63 ± 0.015 ^c	0.88 ± 0.034 ^c	0.51 ± 0.050 ^b
5 µM Se	0.14 ± 0.004 ^a	0.10 ± 0.006 ^a	0.23 ± 0.006 ^a	0.10 ± 0.010 ^a	0.17 ± 0.054 ^a	0.37 ± 0.063 ^a	0.47 ± 0.058 ^a	0.31 ± 0.050 ^a
+ 25 µM As(V)	0.19 ± 0.010 ^d	0.12 ± 0.009 ^a	0.30 ± 0.007 ^a	0.13 ± 0.016 ^a	0.24 ± 0.049 ^a	0.55 ± 0.036 ^a	0.64 ± 0.043 ^a	0.39 ± 0.033 ^a
+ 50 µM As(V)	0.20 ± 0.011 ^d	0.13 ± 0.010 ^a	0.32 ± 0.024 ^a	0.14 ± 0.012 ^a	0.26 ± 0.061 ^a	0.58 ± 0.040 ^a	0.66 ± 0.034 ^d	0.41 ± 0.049 ^a
+ 75 µM As(V)	0.22 ± 0.009 ^a	0.15 ± 0.011 ^a	0.36 ± 0.037 ^a	0.15 ± 0.024 ^a	0.28 ± 0.055 ^a	0.60 ± 0.035 ^a	0.73 ± 0.063 ^d	0.43 ± 0.030 ^a

Table 2: p-values from significance testing for the effect of Si and Se on different experimental factors in 3 weeks old rice seedlings obtained from two-way ANOVA.

E x p e r i m e n t a l P a r a m e t e r s	p values for Si supplementation		p values for Se supplementation	
	Root	Shoot	Root	Shoot

P y r u v i c a c i d	0.050	0.040	0.836	0.908
C i t r i c a c i d	0.079	0.040	0.844	0.714
S u c c i n i c a c i d	0.033	0.029	0.789	0.808
M a l i c a c i d	0.010	0.046	0.960	0.983
P y r u v a t e d e h y d r o g e n a s e	0.048	0.075	0.429	0.386
I s o c i t r a t e d	0.025	0.019	0.502	0.165

e h y d r o g e n a s e					
α - k e t o g l u t a r a t e d e h y d r o g e n a s e	0.880	0.683		0.935	0.934
S u c c i n a t e d e h y d r o g e n a s e	0.288	0.247		0.426	0.535
F u m a r	0.288	0.123		0.450	0.217

as e					
M a l a t e d e h y d r o g e n a s e	0.504	0.587		0.716	0.760
C i t r a t e s y n t h a s e	0.019	0.710		0.468	0.501
γ- a m i n o b u t y r i c a c i d	0.002	0.014		0.043	0.476
G l u t a m a t e d e h y d r o g e	0.022	0.049		0.494	0.734

n a s e					
G l u t a m a t e d e c a r b o x y l a s e	0.025	0.050		0.655	0.622
G A B A t r a n s a m i n a s e	0.103	0.373		0.449	0.609
P u t r e s c i n e	0.000	0.029		0.572	0.523
S p e r m i d i n e	0.050	0.000		0.228	0.000
S p e r m i n e	0.003	0.001		0.007	0.086