

Table S1. Estimated drought and Zn stress tolerance indices (stress tolerance indexes, STI) among the seven *Miscanthus* hybrids lines based on growth including; plant height (PH), number of leaves (NOL), shoot dry weight (SDW), physiological; the maximum quantum efficiency of the PSII (Fv/Fm), performance index (PI-ABS), leaf relative water content (RWC), and biochemical; protein, enzymes including polyphenol oxidase (PPO), peroxidase (POD), superoxide dismutase (SOD) and ascorbate peroxidase (APX), lipid peroxidation (MDA), parameters.

<i>Miscanthus</i>														
Drought STI values														
Hybrids	PH	NOL	SDW	Fv/Fm	PI	RWC%	Protein	PPO	POD	SOD	APX	MDA	Phenol	Proline
GRC1	0.87	0.95	0.31	0.95	0.78	0.75	0.95	1.50	0.61	1.49	0.37	1.81	1.05	2.49
GRC3	0.87	0.89	0.39	0.42	0.34	0.53	0.42	1.26	0.75	0.81	0.55	0.59	0.52	1.26
GRC6	0.58	0.84	0.44	0.38	0.27	0.84	0.38	0.90	1.90	0.47	0.98	1.80	1.33	2.77
GRC9	0.66	0.45	0.38	0.77	0.57	0.87	0.77	0.58	0.62	0.46	1.81	0.83	1.23	1.60
GRC10	1.24	1.07	1.87	1.17	1.16	1.19	1.17	1.42	1.95	1.44	3.44	0.84	5.07	4.49
GRC14	0.74	0.70	0.60	0.59	0.52	1.14	0.59	1.04	0.94	1.64	1.45	2.53	2.01	2.21
GRC15	0.85	0.59	0.76	0.61	0.56	0.90	0.61	1.05	1.05	0.82	1.04	3.45	2.17	1.77
Zn STI values														
GRC1	0.90	1.06	0.46	0.85	0.72	0.66	0.63	1.34	0.69	2.55	0.42	2.29	1.00	2.63
GRC3	0.82	0.85	0.33	0.46	0.44	0.54	1.14	1.06	0.78	0.88	0.55	0.73	0.63	1.25
GRC6	0.64	0.87	0.49	0.75	0.49	0.86	1.19	1.12	2.17	0.60	1.07	1.84	1.50	2.31
GRC9	0.79	0.40	0.34	0.45	0.31	0.91	0.79	0.65	0.65	0.52	1.68	1.32	1.32	1.60
GRC10	1.25	1.07	1.49	1.19	1.01	1.21	1.82	1.58	1.84	1.54	3.42	0.94	4.34	3.77
GRC14	0.75	0.61	0.64	0.41	0.35	1.00	1.19	1.10	0.94	1.75	1.59	3.08	2.18	2.48
GRC15	0.89	0.59	0.69	0.44	0.37	0.76	1.35	1.06	1.02	0.81	1.02	3.67	2.23	1.62

Table S2. Estimated drought and Zn stress tolerance indices (stress tolerance indexes, STI) among the seven giant reed clones based on growth including; plant height (PH), number of leaves (NOL), shoot dry weight (SDW), physiological; the maximum quantum efficiency of the PSII (Fv/Fm), performance index (PI-ABS), leaf relative water content (RWC), and biochemical; protein, enzymes including polyphenol oxidase (PPO), peroxidase (POD), superoxide dismutase (SOD) and ascorbate peroxidase (APX), lipid peroxidation (MDA), parameters.

<i>Giant reed</i>														
Drought STI values														
Clones	PH	NOL	SDW	Fv/Fm	PI	RWC%	Protein	PPO	POD	SOD	APX	MDA	Phenol	Proline
A1	0.83	0.77	0.55	0.81	0.67	0.84	0.49	1.12	2.21	0.35	0.46	2.38	0.50	1.68
ASR	0.68	0.67	0.25	0.88	0.08	0.85	1.28	1.66	0.94	2.10	1.13	0.83	0.72	1.99
CT2	0.22	0.41	0.10	0.83	0.58	0.69	1.50	0.90	0.65	2.05	1.42	2.30	0.83	0.84
PI1	0.40	0.62	0.30	0.62	0.44	0.74	1.15	0.88	0.96	0.76	1.21	1.82	1.53	1.51
PC1	1.86	1.50	0.81	1.04	2.13	0.86	1.44	2.17	2.37	3.35	2.40	3.10	3.68	3.02
PC6	0.79	0.75	0.37	0.97	0.88	0.72	0.67	1.27	0.94	0.87	0.61	3.02	1.15	1.36
PC7	1.02	0.46	0.33	0.70	0.62	0.71	1.02	0.77	0.75	1.13	1.08	2.28	0.82	1.04
Zn STI values														
A1	0.91	0.90	0.52	0.88	0.56	0.87	0.53	1.16	2.07	0.35	0.52	2.06	0.50	1.65
ASR	0.68	0.67	0.25	0.84	0.06	0.87	1.30	1.41	1.19	1.90	1.33	1.22	0.76	2.03
CT2	0.25	0.33	0.11	0.84	0.45	0.63	1.31	0.92	0.67	1.34	1.46	2.01	0.87	0.83
PI1	0.36	0.62	0.27	0.51	0.78	0.81	1.23	0.88	0.82	1.07	1.30	1.25	1.65	1.53
PC1	1.75	1.66	0.74	1.03	2.20	0.95	1.52	2.23	1.78	3.76	2.19	2.99	3.59	2.88
PC6	0.92	0.82	0.39	1.00	0.80	0.83	0.82	1.27	1.11	1.26	0.90	2.84	1.11	1.67
PC7	1.05	0.49	0.28	0.82	0.50	0.77	0.80	0.83	0.74	1.10	0.77	0.86	0.84	1.08

Table S3. Contributions and correlations of each growth and physiological parameter to the three main components of the PCA, used in the PCA ranking procedure based on the STI (drought and Zn) of *Miscanthus* hybrid lines and giant reed clones.

<i>Miscanthus</i> hybrids												
Parameters	Drought						Zn					
	Contributions			Correlations			Contributions			Correlations		
	PC1	PC2	PC3	PC1	PC2	PC3	PC1	PC2	PC3	PC1	PC2	PC3
PH	8.98	11.66	0.02	0.82	-0.54	-0.02	8.20	2.09	1.69	0.84	-0.22	0.17
NOL	6.42	13.65	1.61	0.69	-0.59	0.17	5.81	18.53	0.03	0.71	-0.64	-0.02
SDW	11.81	0.13	2.98	0.94	0.06	0.23	10.45	0.77	1.50	0.95	0.13	0.16
Fv/Fm	7.51	0.06	21.99	0.75	-0.04	-0.62	8.83	7.03	0.51	0.87	-0.40	-0.09
PI	9.34	0.10	15.30	0.84	-0.05	-0.52	9.59	7.55	0.35	0.91	-0.41	-0.08
RWC%	6.99	15.69	0.15	0.72	0.63	-0.05	6.39	12.60	1.21	0.74	0.53	-0.14
Protein	3.50	12.00	22.70	0.51	-0.55	0.63	8.46	1.55	0.03	0.85	0.19	-0.02
PPO	4.85	15.12	0.00	0.60	-0.62	-0.01	10.85	2.71	0.19	0.96	-0.25	-0.06
POD	5.28	4.61	18.55	0.63	0.34	0.57	5.08	4.44	17.18	0.66	0.32	-0.53
SOD	8.19	0.22	0.01	0.78	-0.08	-0.01	3.04	4.42	34.08	0.51	-0.31	0.74
APX	6.96	11.66	0.28	0.72	0.54	-0.07	8.26	10.02	0.50	0.84	0.47	-0.09
MDA	0.54	5.60	15.62	-0.20	0.38	0.53	2.87	5.87	28.29	-0.50	0.36	0.68
Phenol	11.38	5.32	0.03	0.92	0.37	0.02	5.71	19.62	0.89	0.70	0.66	0.12
Proline	8.24	4.19	0.76	0.79	0.33	0.12	6.45	2.80	13.55	0.74	0.25	0.47
Giant reed clones												
Parameters	Drought						Zn					
	Contributions			Correlations			Contributions			Correlations		
	PC1	PC2	PC3	PC1	PC2	PC3	PC1	PC2	PC3	PC1	PC2	PC3
PH	8.36	8.54	0.06	0.85	-0.43	-0.03	7.74	9.04	9.04	0.81	-0.46	-0.35
NOL	10.63	0.45	2.35	0.96	-0.10	0.19	11.04	0.00	2.36	0.97	-0.01	-0.18
SDW	9.90	2.39	1.03	0.93	-0.23	0.12	11.03	0.13	0.00	0.97	-0.06	0.01
Fv/Fm	4.76	0.09	22.03	0.64	-0.04	-0.57	2.80	25.71	5.94	0.49	-0.78	0.29
PI	6.50	6.26	6.24	0.75	-0.37	0.30	7.64	1.92	0.30	0.81	0.21	-0.06
RWC%	5.13	0.04	20.12	0.67	-0.03	-0.54	7.01	2.59	6.52	0.77	-0.25	-0.30
Protein	4.00	24.28	2.03	0.59	0.73	0.17	6.16	10.22	13.68	0.73	0.49	0.43
PPO	9.89	0.46	5.10	0.93	0.10	-0.27	11.31	0.14	0.01	0.98	-0.06	-0.01
POD	10.55	0.00	3.61	0.96	-0.01	0.23	10.65	0.34	0.34	0.95	-0.09	-0.07
SOD	1.61	22.24	8.56	-0.37	0.70	0.35	0.02	33.20	7.35	-0.04	0.88	-0.32
APX	6.91	9.34	4.36	0.77	0.45	0.25	4.56	6.04	29.03	0.62	0.38	0.63
MDA	1.75	25.41	18.18	-0.39	-0.75	0.52	0.17	2.72	24.87	0.12	-0.25	0.59
Phenol	9.38	0.49	6.25	0.90	0.10	0.30	8.82	7.60	0.25	0.87	0.42	-0.06
Proline	10.65	0.01	0.07	0.96	0.01	0.03	11.05	0.33	0.31	0.97	0.09	-0.07

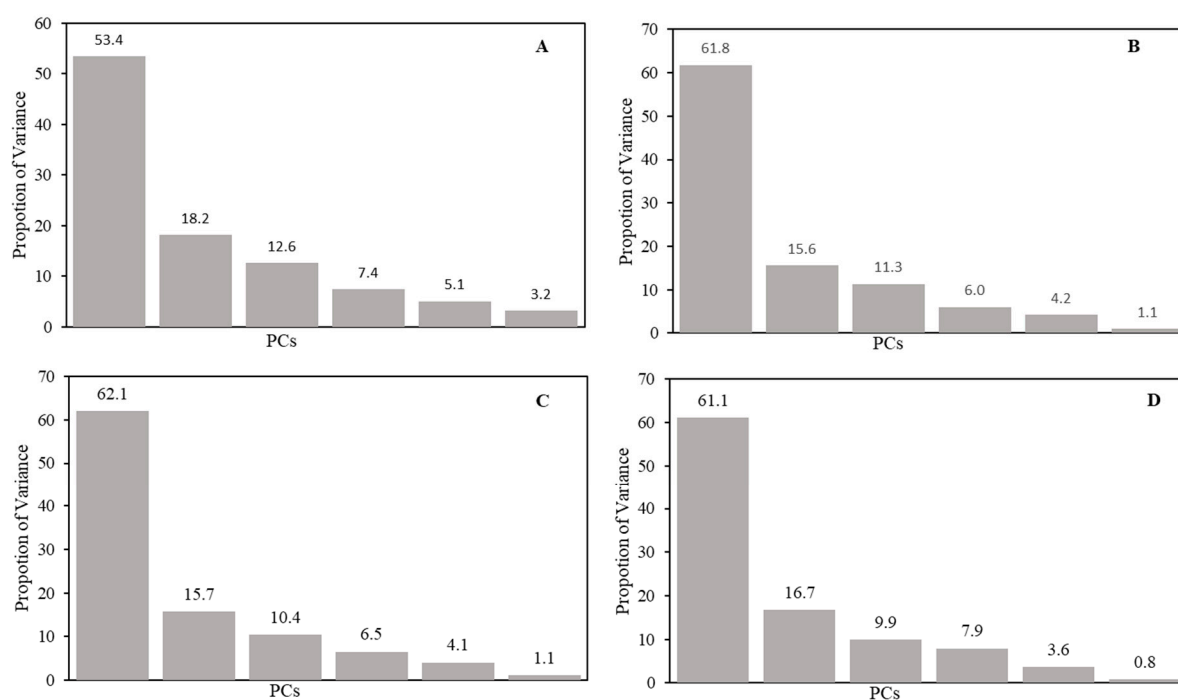


Figure S1. The proportion of variance for principal component analysis (PCA) based on the STI of growth and physiological traits of *Miscanthus* hybrids under drought (A) and under Zn (B) stress conditions and giant reed clones (C) and (D), respectively.