



Figure S1. Effect of seed primed with SPM on phenotypic changes of two different rice cultivars under Cr toxicity. (a) Cr-induced phenotypical changes on the CY927 cultivar and mitigation effect of SPM under Cr stress. (b) Cr-induced phenotypical changes on the YLY689 cultivar and mitigation effect of SPM under Cr exposure.

Table S1. Primers information

Sr. #	Primer name	Accession No.	sequence
1	PR1-F	AU163470	ATGCTTCGTGCCTCCACTAC
2	PR1-R		GGCGAGTAGTTGCAGGTGAT
3	PR2-F	AY323485	ATTGAAGCAGGGAGTCGCAT
4	PR2-R		CGTGTGCTTGGTGCTGTATG
5	NPR1-F	DQ450947	AGCCCTTGACTCTGACGATG
6	NPR1-R		CAATGTTCGACGGCGTAGTG

Table S2. Effects of seed priming with Spm on net photosynthetic rate (Pn), transpiration rate (Tr), stomatal conductance (gs), intercellular concentration of CO₂ (Ci), and photochemical efficiency of PS II (Fv/Fm) under chromium (Cr) stress

Genotypes	Treatments	Pn	Tr	Gs	Ci	Fv/Fm
CY927	CK	7.43±0.06 ^b	4.25±0.13 ^b	0.25±0.00 ^a	466.44±1.86 ^c	0.62±0.02 ^a
	Spm	7.49±0.05 ^b	4.33±0.03 ^b	0.25±0.00 ^a	472.88±3.85 ^{bc}	0.63±0.02 ^a
	Cr	3.19±0.02 ^f	2.26±0.03 ^f	0.17±0.00 ^d	236.27±1.37 ^g	0.23±0.02 ^e
	Spm+Cr	5.43±0.05 ^d	2.81±0.05 ^d	0.19±0.00 ^c	274.99±4.44 ^e	0.35±0.01 ^c
YLY689	CK	7.90±0.01 ^a	4.64±0.01 ^a	0.25±0.00 ^a	479.09±3.96 ^a	0.63±0.02 ^a
	Spm	7.94±0.06 ^a	4.68±0.03 ^a	0.26±0.00 ^a	483.82±0.23 ^a	0.65±0.02 ^a
	Cr	4.30±0.08 ^e	2.64±0.01 ^e	0.19±0.00 ^c	267.77±1.44 ^f	0.31±0.01 ^d
	Spm+Cr	6.03b±0.07 ^c	3.57±0.02 ^c	0.21±0.00 ^b	316.35±3.17 ^d	0.41±0.02 ^b

The same letters within a column designate there was no significant difference at a 95% probability level at the $p < 0.05$ level, correspondingly.

Table S3. Effects of seed priming with Spm on Cr, micro as well as macronutrients uptake in shoots of both rice cultivars (CY927, YLY689) under chromium (Cr) stress

Genotypes	Treatments	Na ⁺	Mg ²⁺	P	K ⁺	Ca ²⁺	Mn ²⁺	Fe ²⁺	Cu ²⁺	Zn ²⁺	Cr ⁶⁺
		mg/g	mg/g	mg/g	mg/g	mg/g	mg/g	mg/g	mg/g	mg/g	mg/g
		Shoots									
CY-927	CK	2.82±0.12 ^{cd}	3.57±0.30 ^b	10.23±0.24 ^b	34.05±2.11 ^b	3.76±0.22 ^b	1.49±0.06 ^b	0.21±0.09 ^b	0.03±0.01 ^b	0.09±0.03 ^c	-
	SPM	2.90±0.20 ^c	3.64±0.28 ^b	10.55±0.07 ^b	35.92±2.21 ^b	3.83±0.23 ^b	1.54±0.05 ^b	0.21±0.05 ^b	0.03±0.01 ^b	0.09±0.01 ^c	-
	Cr	2.69±0.02 ^d	2.18±0.13 ^c	6.83±0.127 ^f	22.85±1.67 ^c	2.25±0.17 ^f	0.31±0.05 ^f	0.05±0.04 ^f	0.01±0.00 ^d	0.05±0.01 ^c	1.93±0.04 ^a
	SPM+Cr	1.59±0.05 ^f	2.92±0.06 ^c	8.65±0.13 ^d	28.02±1.09 ^d	2.96±0.14 ^d	0.90±0.08 ^d	0.15±0.01 ^c	0.02±0.01 ^c	0.07±0.03 ^d	1.42±0.03 ^c
YLY689	CK	3.95±0.10 ^a	4.92±0.42 ^a	14.50±0.27 ^a	39.80±3.68 ^a	4.53±0.11 ^a	2.57±0.10 ^a	0.38±0.01 ^a	0.04±0.00 ^a	0.26±0.02 ^a	-
	SPM	4.01±0.34 ^a	5.17±0.23 ^a	15.68±0.65 ^a	41.67±1.53 ^a	4.61±0.07 ^a	2.66±0.06 ^a	0.42±0.04 ^a	0.04±0.00 ^a	0.27±0.01 ^a	-
	Cr	3.05±0.11 ^{bc}	2.49±0.51 ^d	7.56±0.55 ^c	28.22±2.53 ^d	2.50±0.12 ^c	0.53±0.11 ^c	0.17±0.02 ^{dc}	0.02c±0.00 ^c	0.09c±0.01 ^c	1.73±0.03 ^b
	SPM+Cr	1.68±0.04 ^c	3.61±0.05 ^b	9.75±0.31 ^c	32.97±1.15 ^c	3.75±0.16 ^c	1.24±0.18 ^c	0.25±0.03 ^c	0.03±0.00 ^b	0.20b±0.02 ^b	1.46±0.03 ^d

The same letters within a column designate there was no significant difference at a 95% probability level at the $p < 0.05$ level, correspondingly.

Table S4. Effects of seed priming with Spm on Cr, micro as well as macronutrients uptake in roots of both rice cultivars (CY927, YLY689) under chromium (Cr) stress

Genotypes	Treatments	Na ⁺	Mg ²⁺	P	K ⁺	Ca ²⁺	Mn ²⁺	Fe ²⁺	Cu ²⁺	Zn ²⁺	Cr ⁶⁺
		mg/g	mg/g	mg/g	mg/g	mg/g	mg/g	mg/g	mg/g	mg/g	mg/g
		Roots									
CY-927	CK	4.61±0.25 ^c	2.24±0.23 ^{ef}	5.51±0.23 ^c	12.50±0.22 ^b	3.34±0.33 ^b	0.39±0.02 ^a	5.26±0.09 ^b	0.18±0.01 ^b	0.10a±0.01 ^b	-
	SPM	4.53±0.08 ^{cd}	2.17±0.17 ^f	5.47±0.15 ^c	12.58±0.29 ^b	3.54±0.26 ^b	0.39±0.05 ^a	5.67±1.37 ^b	0.18±0.01 ^b	0.11a±0.02 ^b	-
	Cr	3.65±0.08 ^e	2.88±0.46 ^c	4.08±0.32 ^f	5.48±0.17 ^f	1.81±0.08 ^f	0.07±0.02 ^e	2.88±0.26 ^f	0.09±0.01 ^e	0.06b±0.01 ^e	2.65a±0.39 ^b
	SPM+Cr	3.09±0.28 ^f	2.59±0.12 ^d	4.64±0.21 ^e	8.89±0.24 ^d	2.41±0.31 ^d	0.21±0.06 ^c	3.64±0.13 ^d	0.14±0.01 ^d	0.08ab±0.02 ^d	0.50b±0.09 ^c
YLY689	CK	7.97±0.54 ^a	2.29±0.13 ^c	8.36±0.07 ^a	15.65±1.49 ^a	4.39±0.34 ^a	0.41±0.07 ^a	6.88±0.35 ^a	0.21±0.06 ^a	0.13a±0.03 ^a	-
	SPM	8.24±0.45 ^a	2.33±0.99 ^e	8.67±0.14 ^a	15.98±3.11 ^a	4.57±0.18 ^a	0.42±0.02 ^a	6.63±0.45 ^a	0.22±0.02 ^a	0.13a±0.05 ^a	-
	Cr	6.21±0.16 ^b	4.72±0.07 ^a	5.26±0.32 ^d	6.41±1.54 ^c	2.03±0.17 ^c	0.08±0.01 ^{dc}	3.36±0.11 ^c	0.09±0.04 ^c	0.06c±0.04 ^c	3.31a±0.53 ^a
	SPM+Cr	4.46±1.02 ^d	4.17±0.24 ^b	6.90±0.25 ^b	9.47±2.07 ^{cd}	2.65±0.10 ^c	0.29±0.03 ^b	4.56±0.27 ^c	0.16±0.03 ^c	0.09b±0.02 ^{cd}	0.33b±0.51 ^d

The same letters within a column designate there was no significant difference at a 95% probability level at the $p < 0.05$ level, correspondingly.