

Supplementary Materials

1 Supplementary Tables

Table S1 Basic physicochemical properties of the tested soil.

Parameters	
pH	5.12 ± 0.17
CEC (cmol(+)/kg)	18.4 ± 1.83
Organic C (g/kg)	29.3 ± 2.59
Total N (%)	0.98 ± 0.13
Available P (mg/kg)	38.2 ± 3.62
Available K (mg/kg)	90.0 ± 4.20
Total Pb (mg/kg)	32.8 ± 0.43
Total Zn (mg/kg)	90.3 ± 4.29
Total Cd (mg/kg)	0.42 ± 0.01
DTPA-Pb (mg/kg)	6.78 ± 0.91
DTPA-Zn (mg/kg)	2.54 ± 0.13
DTPA-Cd (mg/kg)	0.19 ± 0.02

All data were presented as means ± SE (standard error).

Table S2 Two-way ANOVA of different indexes among different fertilization rates in two consecutive years.

Factor	Years		Fertilizers		Years * Fertilizers	
	<i>F</i>	<i>P</i>	<i>F</i>	<i>P</i>	<i>F</i>	<i>P</i>
Grain yield	35.1	<0.001***	29.6	<0.001***	6.94	0.001**
Grain Cd concentration	53.1	<0.001***	2056	<0.001***	154	<0.001***
Glume Cd concentration	338	<0.001***	904	<0.001***	1.32	<0.001***
Leaf Cd concentration	28.6	<0.001***	83.8	<0.001***	33.7	<0.001***
Shoot Cd concentration	19.8	<0.001***	11.6	<0.001***	1.15	0.367 ^{ns}
Root Cd concentration	471	<0.001***	21.8	<0.001***	21.7	<0.001***
TF _{stem/root}	57.7	<0.001***	11.5	<0.001***	7.91	0.001**
TF _{leaf/root}	217	<0.001***	55.3	<0.001***	35.3	<0.001***
TF _{grain/root}	245	<0.001***	325	<0.001***	47.8	<0.001***
TF _{grain/stem}	14.8	0.001**	298	<0.001***	23.9	<0.001***
TF _{grain/leaf}	1.06	0.317 ^{ns}	588	<0.001***	39.3	<0.001***
TF _{grain/glume}	212	<0.001***	641	<0.001***	69.5	<0.001***
Grain Zn concentration	0.860	0.366 ^{ns}	102	<0.001***	2.63	0.069 ^{ns}
Grain Ca concentration	14.9	0.001**	186	<0.001***	3.60	0.025*
Grain Fe concentration	14.0	0.001**	93.9	<0.001***	7.31	0.001**

Grain Mn concentration	0.540	0.472 ^{ns}	14.5	<0.001***	4.40	0.012*
Phytic acid content	0.061	0.807 ^{ns}	15.9	<0.001***	17.5	<0.001***
Total protein content	245	<0.001***	18.5	<0.001***	11.8	<0.001***
PA/Zn	1.55	0.229 ^{ns}	64.4	<0.001***	13.2	<0.001***
Estimated Zn bioavailability	0.051	0.824	44.2	<0.001***	7.33	0.001**

Years and fertilizers are random factors. Number represents *F-values* (*, ** and ***) significant at $p < 0.05$, $p < 0.01$ and $p < 0.001$ levels, respectively. ns represents non-significance.