



Supplemental Figure 1. Water pH in soil at initial state (green), at harvest of sorghum biomass (blue) and of sorghum Trudan Headless (orange) (the box plots indicate the median and the 25 and 75 percentiles; red diamond = mean, the dotted line separates the initial state and the 2 cultivars of sorghum). Significant differences between conditions are indicated by different letters at the level of $\alpha = 0.05$.

Supplementary Table 1. Average Dry Weight by plant of the 2 sorghum cultivars sampled at harvest for the 3 areas (10 samples by area, mean + SD).

	Area	Average Dry Weight per plant (g)
Trudan Headless	1	16 ± 9
	2	43 ± 16
	3	16 ± 8
Biomass 133	1	125 ± 88
	2	247 ± 98
	3	16 ± 15

Supplementary Table 2. Percent of mobile TE (As, Cd, Cr, Cu, Ni, Pb, Zn) calculated as extractable concentrations over total concentrations in soil for the plots for the 2 sorghum cultivars at the 3 areas (mean ± SD). Significant differences between conditions are indicated by different letters at the level of $\alpha = 0.05$.

		As	Cd	Cr	Cu	Ni	Pb	Zn		
S. Biomass 133	Area 1	Initial state	0.043 (0.005) ^{abc}	0.442 (0.066) ^{ab}	0.023 (0.005) ^a	0.516 (0.273) ^a	0.216 (0.083)	0.0067 (0.003)	0.056 (0.007) ^c	
		Before harvest	0.039 (0.004) ^{ab}	0.400 (0.092) ^b	0.024 (0.019) ^a	0.643 (0.038) ^{ab}	0.181 (0.038)	0.0074 (0.026)	0.066 (0.003) ^{ac}	
	Area 2	Initial state	0.049 (0.005) ^{bc}	0.566 (0.077) ^a	0.035 (0.001) ^b	0.562 (0.150) ^{ab}	0.208 (0.036)	0.0087 (0.005)	0.088 (0.016) ^b	
		Before harvest	0.054 (0.018) ^c	0.541 (0.686) ^a	0.022 (0.009) ^a	0.799 (0.095) ^b	0.213 (0.37)	0.0104 (0.001)	0.111 (0.01) ^d	
	Area 3	Initial state	0.038 (0.007) ^{abc}	0.565 (0.115) ^a	0.029 (0) ^{ab}	0.553 (0.125) ^{ab}	0.194 (0.066)	0.0093 (0.003)	0.070 (0.007) ^{ab}	
		Before harvest	0.032 (0.007) ^a	0.416 (0.073) ^b	0.025 (0.006) ^a	0.502 (0.032) ^a	0.178 (0.043)	0.0062 (0.007)	0.069 (0.005) ^{ac}	
	S. Trudan HL	Area 1	Initial state	0.043 (0.01) ^{abc}	0.503 (0.107) ^{abc}	0.023 (0.004) ^a	0.539 (0.141) ^a	0.157 (0.066)	0.0068 (0.005)	0.059 (0.019) ^a
			Before harvest	0.039 (0.021) ^{ab}	0.505 (0.026) ^{ab}	0.023 (0.002) ^a	0.540 (0.098) ^a	0.193 (0.037)	0.0080 (0.003)	0.073 (0.004) ^{ab}
		Area 2	Initial state	0.058 (0.017) ^{bc}	0.681 (0.081) ^c	0.034 (0.002) ^b	0.613 (0.141) ^a	0.204 (0.036)	0.0092 (0.006)	0.097 (0.011) ^c
			Before harvest	0.056 (0.009) ^c	0.542 (0.04) ^{abc}	0.022 (0.006) ^a	0.822 (0.094) ^b	0.222 (0.033)	0.0105 (0.004)	0.092 (0.004) ^c
		Area 3	Initial state	0.031 (0.01) ^a	0.386 (0.132) ^a	0.025 (0.002) ^a	0.495 (0.086) ^a	0.197 (0.04)	0.0050 (0.007)	0.059 (0.015) ^a
			Before harvest	0.044 (0.005) ^{abc}	0.584 (0.088) ^{bc}	0.027 (0) ^a	0.607 (0.12) ^a	0.223 (0.033)	0.0105 (0.001)	0.085 (0.011) ^{bc}

Supplementary Table 3 A. BCF values for the sorghum Biomass 133 at the 3 areas (BCF: calculated as plant part metal concentrations over pseudo-total (BCF tot) or extractable (BCF ext) metal concentrations in soil). Significant differences between conditions are indicated by different letters at the level of $\alpha = 0.05$ (lower case for BCF tot ; upper case for BCF ext).

Sorghum Biomass 133		As	Cd	Cr	Cu	Ni	Pb	Zn
Area 1	BCF ext	7.2 (3.3)	86 (31) ^{A,B}	51 (28)	14 (5) ^A	6 (2.6)	18 (15)	44 (11) ^A
	BCF tot	0.003 (0.001)	0.35 (0.16)	0.012 (0.006)	0.08 (0.13) ^a	0.01 (0.005)	0.001 (0.0006)	0.029 (0.008)
Area 2	BCF ext	4.9 (3.9)	49 (21) ^A	44 (25)	7.3 (2.3) ^B	5.5 (3.1)	16 (16)	20 (5) ^B
	BCF tot	0.002 (0.0015)	0.26 (0.11)	0.01 (0.005)	0.056 (0.013) ^b	0.011 (0.006)	0.001 (0.0009)	0.022 (0.004)
Area 3	BCF ext	4.4 (1.5)	108 (29) ^B	44.6 (13.7)	10.8 (2.4) ^{A,B}	5.3 (2.1)	9.5 (3)	33.3 (8.8) ^A
	BCF tot	0.001 (0.003)	0.43 (0.1)	0.011 (0.003)	0.052 (0.007) ^b	0.009 (0.003)	0.0005 (0.0001)	0.023 (0.005)

Supplementary Table 3 B. BCF values for the sorghum Trudan Headless at the 3 areas (BCF: calculated as plant part metal concentrations over pseudo-total (BCF tot) or extractable (BCF ext) metal concentrations in soil). Significant differences between conditions are indicated by different letters at the level of $\alpha = 0.05$ (lower case for BCF tot ; upper case for BCF ext).

Sorghum Trudan HL		As	Cd	Cr	Cu	Ni	Pb	Zn
Area 1	BCF ext	13 (7.5) ^A	151 (48) ^A	78.5 (25) ^A	16.3 (4.7) ^A	9.4 (3.7) ^A	41.3 (38.4) ^A	56 (17.3) ^A
	BCF tot	0.005 (0.002) ^a	0.763 (0.29)	0.018 (0.004) ^a	0.082 (0.009) ^a	0.016 (0.001) ^a	0.002 (0.0014) ^a	0.04 (0.01)
Area 2	BCF ext	3.9 (1.7) ^B	100.8 (19.8) ^B	25.4 (9.5) ^B	9.1 (0.1) ^B	3 (1.5) ^B	10.5 (5.6) ^B	36 (6) ^B
	BCF tot	0.002 (0.0005) ^b	0.535 (0.06)	0.006 (0.002) ^b	0.073 (0.012) ^{a,b}	0.006 (0.002) ^a	0.001 (0.0002) ^b	0.033 (0.004)
Area 3	BCF ext	4 (1) ^B	128 (29) ^{A,B}	46 (15) ^B	10.6 (2.2) ^B	4.5 (2) ^B	9.3 (5.3) ^B	40.6 (9.6) ^B
	BCF tot	0.002 (0.0004) ^b	0.726 (0.14)	0.012 (0.003) ^c	0.063 (0.009) ^b	0.009 (0.003) ^a	0.001 (0.0002) ^b	0.034 (0.008)