

Supplementary material-Table S1. Total content and available fractions of the elements measured in Technosols during the study years (2010 and 2018). Values are means (n= 36, twelve mesocosms in triplicates) \pm standard errors. Different letters show statistically significant differences between years (t-test, $P < 0.05$). Total N content was also reported in Panico et al. (2019) for year 2010.

	2010	2018
Total C (g Kg ⁻¹)	53.40 (± 9.20)	36.99 (± 9.33)
Total N (g Kg ⁻¹)	24.54 (± 5.48) ^b	39.53 (± 6.95) ^a
Organic C (g Kg ⁻¹)	46.41 (± 2.52) ^a	27.32 (± 3.11) ^b
Total Cr ($\mu\text{g g}^{-1}$ dw)	1.41 (± 0.15) ^b	1.69 (± 0.10) ^a
Total Cu ($\mu\text{g g}^{-1}$ dw)	11.09 (± 1.42)	12.44 (± 1.58)
Total Fe (mg g ⁻¹ dw)	12.56 (± 0.10) ^b	13.59 (± 0.12) ^a
Total K (mg g ⁻¹ dw)	525.56 (± 4.00) ^b	596.32 (± 3.79) ^a
Total Mg (mg g ⁻¹ dw)	4.35 (± 0.12) ^a	3.61 (± 0.15) ^b
Total Mn ($\mu\text{g g}^{-1}$ dw)	780.00 (± 30.00) ^a	640.00 (± 20.00) ^b
Total Na (mg g ⁻¹ dw)	19.17 (± 0.30) ^b	21.08 (± 0.22) ^a
Total Ni ($\mu\text{g g}^{-1}$ dw)	1.04 (± 0.02) ^b	1.59 (± 0.02) ^a
Total Pb ($\mu\text{g g}^{-1}$ dw)	42.80 (± 1.31) ^b	52.22 (± 1.29) ^a
Total Zn ($\mu\text{g g}^{-1}$ dw)	110.00 (± 5.00) ^b	120.00 (± 5.00) ^a
Available Cr ($\mu\text{g g}^{-1}$ dw)	0.02 (± 0.002) ^a	0.012 (± 0.001) ^b
Available Cu ($\mu\text{g g}^{-1}$ dw)	1.21 (± 0.004)	1.24 (± 0.12)
Available Fe (mg g ⁻¹ dw)	0.005 (± 0.00) ^b	0.011 (± 0.002) ^a
Available K (mg g ⁻¹ dw)	21.78 (± 0.22) ^b	30.93 (± 0.19) ^a
Available Mg (mg g ⁻¹ dw)	1.04 (± 0.05) ^b	2.15 (± 0.45) ^a
Available Mn ($\mu\text{g g}^{-1}$ dw)	7.00 (± 0.00)	8.00 (± 1.00)

Available Na (mg g ⁻¹ dw)	6.40 (±0.80) ^b	11.03 (±1.83) ^a
Available Ni (µg g ⁻¹ dw)	0.004 (±0.001) ^b	0.006 (±0.000) ^a
Available Pb (µg g ⁻¹ dw)	0.23 (±0.03) ^b	0.41 (±0.06) ^a
Available Zn (µg g ⁻¹ dw)	5.00 (±1.00)	4.00 (±1.00)

Supplementary material-Table S2. Microbial (*Cmic*) and fungal carbon (*Cfung*), basal respiration (BR), total (TFB) and active (AFB) fungal biomass, percentage of active fungal biomass on total fungal biomass (FAR) measured in Technosols during different years (2010 and 2018). Values are means (n= 36, twelve mesocosms in triplicates) ± standard errors. Different letters show statistically significant differences between years (t-test, P<0.05). *Cmic*, BR and TFB for year 2010 were also reported in Panico et al. (2019).

	2010	2018
<i>Cmic</i> (mg C g ⁻¹ dw)	2.47 (±0.11)	2.50 (±0.07)
<i>Cfung</i> (µg C g ⁻¹ dw)	13.31 (±0.20) ^a	2.94 (±0.31) ^b
TFB (mg g ⁻¹ dw)	0.36 (±0.06) ^a	0.08 (±0.01) ^b
AFB (mg g ⁻¹ dw)	0.10 (±0.01) ^a	0.01 (±0.002) ^b
FAR (%)	0.54 (±0.20) ^a	0.12 (±0.01) ^b
BR (µg CO ₂ g ⁻¹ dw h ⁻¹)	5.60 (±0.78) ^b	11.54 (±0.97) ^a

Supplementary material-Table S3. Relationships among the integrated soil quality indices. Spearman correlations between SQI and SQI_{MDS}, sSQI and SQR.

	SQI_{MDS}	sSQI
SQI		
Correlation coefficient R	0.339	0.267
P value	0.098	0.160