

Electronic Supplementary materials

ESM 1: Descriptive statistics (mean and standard deviation of mean) for SOC, Therm-C, POM-C, FF-C, POX-C, and Min-C depending on the situation, i.e. all, application of organic inputs, or field location, and at soil depths of 0-10 cm and 10-30 cm.

Situations	SOC		Therm-C		POM-C		FF-C		POX-C		Min-C	
	(g C kg ⁻¹ soil)		(g C kg ⁻¹ soil)		(g C kg ⁻¹ soil)		(g C kg ⁻¹ soil)		(mg C kg ⁻¹ soil)		(mg C kg ⁻¹ soil)	
	0-10	10-30	0-10	10-30	0-10	10-30	0-10	10-30	0-10	10-30	0-10	10-30
All	5.7 (0.4)	3.4 (0.2)	0.6 (0.1)	0.17 (0.02)	2.6 (0.3)	0.8 (0.1)	3.2 (0.2)	2.6 (0.2)	254 (14)	133 (11)	10.7 (1.2)	3.4 (0.3)
No-input	4.6 (0.4)	3.2 (0.2)	0.31 (0.05)	0.12 (0.01)	1.7 (0.2)	0.6 (0.1)	2.9 (0.2)	2.5 (0.2)	223 (18)	129 (13)	7.8 (0.8)	2.8 (0.2)
+Millet residues	5.1 (1.2)	2.3 (0.2)	0.7 (0.2)	0.23 (0.03)	2.7 (0.8)	0.6 (0.2)	2.4 (0.4)	1.7 (0.1)	224 (52)	96 (15)	8.6 (2)	3.2 (0.5)
+Manure	6.3 (0.6)	3.4 (0.5)	0.73 (0.1)	0.21 (0.06)	2.8 (0.3)	0.8 (0.2)	3.5 (0.3)	2.6 (0.3)	274 (22)	117 (16)	11.1 (1.1)	3.6 (0.5)
+Organic wastes	12.2 (1.7)	5.6 (1.1)	1.73 (0.4)	0.31 (0.12)	7 (1.5)	1.9 (0.6)	5.3 (0.4)	3.7 (0.5)	388 (38)	254 (66)	29.2 (9.6)	6 (2.3)
Home-field	7.8 (0.8)	4.2 (0.5)	0.89 (0.14)	0.21 (0.05)	3.7 (0.5)	1.2 (0.2)	3.9 (0.3)	3 (0.3)	299 (22)	158 (20)	14.8 (2.4)	4.4 (0.6)
Out-field	4.5 (0.3)	2.8 (0.2)	0.4 (0.06)	0.15 (0.01)	1.8 (0.2)	0.6 (0.05)	2.7 (0.2)	2.3 (0.2)	221 (16)	114 (11)	7.9 (0.8)	2.7 (0.2)

ESM 2 Soil texture (as determined using the standard pipette method after sieving and sedimentation; ISO 11277 : 2009) in the different situations and according to soil layers. Values are means with standard deviations of mean in parentheses.

Situations	Soil textural fraction (%)			
	Sand	Silt+Clay	Sand	Silt+Clay
	0-10 cm		10-30 cm	
No-input	84.9 (0.9)	14.8 (0.9)	82.5 (1.2)	17 (1.1)
+Millet residues	88.5 (1.5)	11.3 (1.1)	87.2 (1.5)	12.6 (1.5)
+Manure	86.3 (0.9)	13.6 (0.8)	84.6 (1.4)	15 (1.3)
+Organic wastes	86.6 (0.6)	13.8 (0.7)	85.8 (0.7)	14.5 (0.9)

ESM 3: Four factors Random Forest Analysis (with time of sampling included as a fourth factor in the RF analysis) showing the importance of the time of sampling, i.e., cropping cycle (corresponding to the rainy season) or the non-cropping period (dry season), as an explanatory factor of the size of the POX-C pool in carbon-poor cultivated sandy soils of the groundnut basin of Senegal.

