

Supplementary data

Short-term changes in soil properties due to sanitary wastewater irrigation used as a potassium source

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Supplementary Table 1. Means of soil pH (pH_{H2O}), organic matter (OM), phosphorus (P), potassium (K), sodium (Na), calcium (Ca), and base saturation (BS) after cotton harvesting and treatments (Treat.).

Soil depth (m)	Treat.	pH _{H2O}	OM (dag kg ⁻¹)	P (mg dm ⁻³)	K (mg dm ⁻³)	Fe (mg dm ⁻³)	Na (cmol _c dm ⁻³)	Ca (cmol _c dm ⁻³)	BS (%)
0-0.2	T0	6.6Aab	1.5Aa	3.2Aa	161.0Aa	16.1Aa	0.10Ab	4.0Aa	77.5Aab
	T1	7.0Aa	1.3Aa	3.3Aa	155.8Aa	17.5Aa	0.15Aab	3.5Aab	80.5Aa
	T2	6.9Aa	1.5Aa	3.2Aa	160.0Aa	15.8Aa	0.18Ba	3.6Aab	79.0Aa
	T3	6.5Aab	1.5Aa	4.1Aa	110.0Ba	20.1Aa	0.10Ab	3.5Aab	76.8Aab
	T4	6.2Ab	1.5Aa	4.0Aa	107.0Ba	20.0Aa	0.10Ab	3.1Bb	68.0Bb
Mean		6.6	1.5	3.5	138.8	17.9	0.13	3.5	76.4
0.2-0.4	T0	6.3Aa	0.7Aa	1.5Aa	129.8Aa	13.4Aa	0.10Aa	3.1Aa	68.0Aa
	T1	6.6Aa	0.7Aa	1.6Aa	138.5Aa	14.7Aa	0.13Aa	2.9Aa	69.8Aa
	T2	6.6Aa	1.0Aa	1.8Aa	139.5Aa	13.9Aa	0.18Ba	3.1Aa	72.8Aa
	T3	6.4Aa	0.9Aa	1.9Aa	100.5Aa	16.0Ba	0.10Aa	2.8Aa	67.8Aa
	T4	6.3Aa	0.8Aa	1.8Aa	109.3Aa	16.0Ba	0.10Aa	2.7Aa	63.5Aa
Mean		6.4	0.8	1.7	123.5	14.8	0.12	2.9	68.4
0.4-0.6	T0	5.8Aa	0.4Aa	1.3Aa	82.8Aa	15.7Aa	0.10Aa	2.9Aa	62.3Aa
	T1	6.2Aa	0.5Aa	1.3Aa	93.8Aa	14.4Aa	0.10Aa	2.9Aa	65.0Aa
	T2	6.3Aa	0.6Aa	2.5Aa	89.3Aa	15.9Aa	0.18Bb	3.1Aa	68.0Aa
	T3	6.0Aa	0.4Aa	1.0Aa	59.0Aa	14.8Aa	0.10Aa	2.6Aa	61.8Aa
	T4	5.9Aa	0.5Aa	1.0Aa	64.0Aa	14.6Aa	0.10Aa	2.5Aa	57.0Aa
Mean		6.1	0.5	1.4	77.8	15.1	0.12	2.8	62.8
0.6-0.8	T0	5.6Aa	0.2Aa	1.1Aa	61.0Aa	14.0Aa	0.10Aa	2.6Aa	58.8Aa
	T1	6.0Aa	0.4Aa	1.2Aa	74.3Aa	15.0Aa	0.10Aa	2.9Aa	65.5Aa
	T2	6.0Aa	0.3Aa	2.5Aa	63.8Aa	15.3Aa	0.13Aa	2.9Aa	67.5Aa
	T3	5.7Aa	0.2Aa	0.9Aa	48.3Aa	14.2Aa	0.10Aa	2.5Aa	58.8Aa
	T4	5.9Aa	0.4Aa	1.2Aa	49.3Aa	14.9Aa	0.10Aa	2.7Aa	62.0Aa
Mean		5.8	0.3	1.4	59.3	14.7	0.11	2.7	62.5

T0: clean water and mineral fertilizer topdressing; T1: TTW as potassium source for topdressing, equivalent to 40 kg K₂O ha⁻¹ and (T2) 60 kg K₂O ha⁻¹; T3: PTW as potassium source for topdressing, equivalent to 40 kg K₂O ha⁻¹ and (T4) 60 kg K₂O ha⁻¹. Means followed by the same uppercase letter as the control (T0) within the same column, within a depth, do not differ from T0 based on Dunnett's test, p ≤ 0.05. Means followed by the same lowercase letter within the same column, within a depth, do not differ based on Tukey's test, p ≤ 0.05.

Supplementary Table 2. Means of soil electrical conductivity of saturated paste extract (EC_e), water-dispersible clay (WDC), exchangeable sodium percentage (ESP), and sand, silt, and clay levels after cotton harvesting and treatments (Treat.).

Soil depth (m)	Treat.	EC _e	WDC	ESP	Sand	Silt	Clay
		(dS m ⁻¹)	(dag kg ⁻¹)	(%)	(dag kg ⁻¹)	(dag kg ⁻¹)	(dag kg ⁻¹)
0-0.2	T0	0.53Aa	12.69Aa	1.30Ab	51.5Aa	24.5Aa	24.0Aa
	T1	0.53Aa	10.94Aa	2.15Aab	50.0Aa	22.8Aa	27.2Aa
	T2	0.68Aa	10.49Aab	2.35Ba	52.5Aa	23.5Aa	24.0Aa
	T3	0.53Aa	11.50Aa	1.43Aab	52.5Aa	18.8Aa	28.7Aa
	T4	0.40Aa	6.29Bb	1.45Aab	52.5Aa	21.3Aa	26.2Aa
Mean		0.53	10.38	1.74	51.8	22.2	26.1
0.2-0.4	T0	0.38Aa	16.35Aa	1.55Aa	48.3Aa	19.8Aa	32.0Aa
	T1	0.50Aa	14.28Aab	2.05Aa	46.3Aa	19.3Aa	34.5Aa
	T2	0.53Aa	12.39Bab	2.70Aa	49.8Aa	19.0Aa	31.3Aa
	T3	0.33Aa	16.13Aab	1.58Aa	49.8Aa	17.8Aa	32.5Aa
	T4	0.38Aa	11.20Bb	1.58Aa	49.0Aa	16.3Aa	34.8Aa
Mean		0.42	14.07	1.89	48.6	18.4	33.0
0.4-0.6	T0	0.28Aa	14.46Aab	1.55Ab	46.0Aa	19.3Aa	34.7Aa
	T1	0.38Aa	14.39Aab	1.55Ab	44.3Aa	17.8Aa	38.0Aa
	T2	0.53Ba	14.80Aab	2.63Ba	44.3Aa	19.0Aa	36.8Aa
	T3	0.33Aa	16.34Aa	1.65Ab	43.5Aa	19.3Aa	37.3Aa
	T4	0.30Aa	9.99Bb	1.58Ab	42.8Aa	20.5Aa	36.8Aa
Mean		0.36	14.00	1.79	44.1	19.2	36.7
0.6-0.8	T0	0.38Aa	16.83Aa	1.63Aa	43.3Aa	19.8Aa	37.0Aa
	T1	0.35Aa	15.84Aa	1.63Aa	42.5Aa	18.0Aa	39.5Aa
	T2	0.38Aa	16.46Aa	2.05Aa	42.5Aa	17.0Aa	40.5Aa
	T3	0.28Aa	16.46Aa	1.63Aa	43.5Aa	17.3Aa	39.3Aa
	T4	0.30Aa	13.15Aa	1.70Aa	42.8Aa	18.0Aa	39.3Aa
Mean		0.34	15.75	1.73	42.9	18.0	39.1

T0: clean water and mineral fertilizer topdressing; T1: TTW as potassium source for topdressing, equivalent to 40 kg K₂O ha⁻¹ and (T2) 60 kg K₂O ha⁻¹; T3: PTW as potassium source for topdressing, equivalent to 40 kg K₂O ha⁻¹ and (T4) 60 kg K₂O ha⁻¹. Means followed by the same uppercase letter as the control (T0) within the same column, within a depth, do not differ from T0 based on Dunnett's test, $p \leq 0.05$. Means followed by the same lowercase letter within the same column, within a depth, do not differ based on Tukey's test, $p \leq 0.05$.