Table S1. Two-way ANOVA of alkali-hydrolyzable N across soil layers

Alkali-hydrolyzable N					
Topsoil layer					
Source	Type III Sum of Squares	df	Mean Square	F	Significance
bulk density	79.77	2	39.885	0.274	0.765
height	298.494	1	298.494	2.049	0.178
bulk density * height	151.64	2	75.82	0.52	0.607
Error	1748.1	12	145.675		
Corrected Total	190755.538	18			
Plow pan					
Source	Type III Sum of Squares	df	Mean Square	F	Significance
bulk density	1621.297	2	810.648	5.545	0.020*
height	103.344	1	103.344	0.707	0.417
bulk density * height	209.665	2	104.832	0.717	0.508
Error	1754.191	12	146.183		
Corrected Total	209918.183	18			
Subsoil layer					
Source	Type III Sum of Squares	df	Mean Square	F	Significance
bulk density	25.906	2	12.953	0.048	0.953
height	231.125	1	231.125	0.864	0.371
bulk density * height	586.619	2	293.309	1.096	0.365
Error	3211.792	12	267.649		
Corrected Total	206859.264	18			

Table S2. Two-way ANOVA of available P across soil layers

Available P					
Topsoil layer					
Source	Type III Sum of Squares	df	Mean Square	F	Significance
bulk density	39.019	2	19.51	0.429	0.661
height	599.041	1	599.041	13.167	0.003*
bulk density * height	100.481	2	50.24	1.104	0.363
Error	545.951	12	45.496		
Corrected Total	74065.792	18			
Plow pan					
Source	Type III Sum of Squares	df	Mean Square	F	Significance
bulk density	1841.579	2	920.789	9.15	0.004**
height	3145.302	1	3145.302	31.255	0.001**
bulk density * height	713.049	2	356.524	3.543	0.062
Error	1207.589	12	100.632		
Corrected Total	102849.96	18			
Subsoil layer					
Source	Type III Sum of Squares	df	Mean Square	F	Significance
bulk density	2140.816	2	1070.408	1.69	0.226
height	556.222	1	556.222	0.878	0.367
bulk density * height	704.38	2	352.19	0.556	0.588
Error	7602.179	12	633.515		
Corrected Total	100048.411	18			

Table S3. Two-way ANOVA of available K across soil layers

Available K					
Topsoil layer					
Source	Type III Sum of Squares	df	Mean Square	F	Significance
bulk density	1501.778	2	750.889	3.21	0.076
height	5618	1	5618	24.014	0.00**
bulk density * height	57.333	2	28.667	0.123	0.886
Error	2807.333	12	233.944		
Corrected Total	246198	18			
Plow pan					
Source	Type III Sum of Squares	df	Mean Square	F	Significance
bulk density	1029.778	2	514.889	2.473	0.126
height	122.722	1	122.722	0.59	0.457
bulk density * height	715.111	2	357.556	1.718	0.221
Error	2498	12	208.167		
Corrected Total	217135	18			
Subsoil layer					
Source	Type III Sum of Squares	df	Mean Square	F	Significance
bulk density	817	2	408.5	1.772	0.212
height	234.722	1	234.722	1.018	0.333
bulk density * height	1610.111	2	805.056	3.492	0.064
Error	2766.667	12	230.556		
Corrected Total	199493	18			

Note: * denotes significance at $p < 0.05$; ** denotes significance at $p < 0.01$.

Table S4. Results of One-way ANOVA test: Post hoc multiple comparisons (Duncan's test) for alkali-hydrolyzable N in each soil layer

Alkali-hydrolyzable N in topsoil layer					
Duncan					
Treatments	N	Subset of Alpha = 0.05			
		1			
T2	3	93.95			
T3	3	98.9033			
T5	3	99.0767			
T4	3	101.85			
T1	3	101.9133			
T6	3	102.6667			
Significance		0.311			
Alkali-hydrolyzable N in plow pan					
Duncan					
	N	Subset of Alpha = 0.05			
		1	2	3	4
T1	3	88.2633			
T4	3	99.0733			
T2	3	108.5433	108.5433		
T6	3		112.3667		
T3	3			117.12	
T5	3				127.9867
Significance		0.175	0.117	0.298	0.07
Alkali-hydrolyzable N in subsoil layer					
Duncan					
Treatments	N	Subset of Alpha = 0.05			
		1			
T1	3	97.57			
T4	3	100.0133			
T2	3	100.79			
T6	3	101.9167			
T5	3	109.23			
T3	3	109.3267			
Significance		0.21			

Table S5. Results of One-way ANOVA test: Post hoc multiple comparisons (Duncan's test) for available P in each soil layer

Available P in topsoil layer					
Duncan					
Treatments	N	Subset of Alpha = 0.05			
		1	2		
T6	3	52.9033			
T5	3	59.9367	59.9367		
T4	3	60.6167	60.6167		
T1	3		66.7733		
T3	3		70.5633		
T2	3		70.7333		
Significance		0.207	0.099		
Available P in plow pan					
Duncan					
Treatments	N	Subset of Alpha = 0.05			
		1	2	3	
T5	3	49.5067			
T6	3	53.8533			
T4	3	69.02	69.02		
T3	3		76.0067		
T2	3		93.5133	93.5133	
T1	3			96.1467	
Significance		0.41	0.054	0.753	
Available P in subsoil layer					
Duncan					
Treatments	N	Subset of Alpha = 0.05			
		1	2	3	4
T6	3	45.6567			
T4	3	59.2533	59.2533		
T5	3		61.4067	61.4067	
T3	3			70.2367	70.2367
T2	3			75.7367	75.7367
T1	3				81.7067
Significance		0.061	0.058	0.054	0.153

Table S6. Results of One-way ANOVA test: Post hoc multiple comparisons (Duncan's test) for available K in each soil layer

Available K in topsoil layer					
Duncan					
Treatments	N	Subset of Alpha = 0.05			
		1	2	3	4
T6	3	87.3333			
T5	3	96	96		
T4	3	107.3333	107.3333	107.3333	
T3	3		123.3333	123.3333	123.3333
T2	3			126.6667	126.6667
T1	3				146.6667
Significance		0.153	0.059	0.166	0.1
Available K in plow pan					
Duncan					
Treatments	N	Subset of Alpha = 0.05			
		1	2		
T6	3	95.5			
T5	3	97.6667			
T3	3	105	105		
T2	3	105.3333	105.3333		
T1	3		108		
T4	3		118		
Significance		0.137	0.118		
Available K in subsoil layer					
Duncan					
Treatments	N	Subset of Alpha = 0.05			
		1	2		
T6	3	80.3333			
T5	3		100.3333		
T1	3		104		
T2	3		107.6667		
T4	3		107.6667		
T3	3		110.6667		
Significance		1	0.248		