

Table S1. The main physical characteristics of studied soils.

Soil ID	Horizon	Depth	Soil texture	Soil color	Soil name
Y1	Ah	0-6	Sandy Loam	2.5YR 5/2	Fallow Plaggic
	Abhp	6-30	Sandy Loam	2.5YR 6/2	Anthrosol (arenic)
	Oi	0-4	-	-	
Y3	Ah	4-15	Sandy Loam	2.5YR 5/2	Calcic
	B	15-34	Sandy Loam	7.5YR 8/3	Cryosol
	Bt	34-54	Sandy Loam	7.5YR 6/3	(arenic)
	B/C	54-70	Loamy Sand	7.5YR 5/3	
Y5	Ah	0-15	Sandy Loam	2.5YR 5/2	Calcic
	Btg	15-70	Sandy Loam	2.5YR 5/1	Cryosol (stagnic)
Y6	Ahd1	0-6	Sandy Loam	2.5YR 5/2	Plaggic
	Ahd2	6-10	Sandy Loam	2.5YR 6/2	Anthrosol
	Bt	10-40	Sandy Loam	2.5YR 6/3	(arenic)
Y7	Ahp	0-24	Sandy Loam	2.5YR 4/1	Plaggic
	Bg	24-58	Loamy Sand	2.5YR 6/1	Anthrosol (arenic)
Y9	Oi	0-5	-	-	
	Ah	5-13	Sandy Loam	2.5YR 5/2	Calcic
	Bt	13-40	Sandy Loam	7.5YR 8/3	Cryosol (arenic)
	B/C	40-55	Loamy Sand	7.5YR 5/3	
Y10	Ahp	0-26	Sandy Loam	2.5YR 4/1	Plaggic
	A/Bp	26-55	Sandy Loam	2.5YR 5/2	Anthrosol
	Bt	55-70	Loamy Sand	7.5YR 5/3	(arenic)
Y11	Ah	0-6	Sandy Loam	2.5YR 5/2	
	Bt1	6-47	Sandy Loam	7.5YR 8/3	Calcic
	Bt2	47-89	Loamy Sand	7.5YR 6/3	Cryosol (arenic)
	B/C	89-100	Loamy Sand	7.5YR 4/3	
Y12	Ahpz	0-15	Sandy Loam	2.5YR 3/1	Plaggic
	Btz1	15-45	Sandy Loam	7.5YR 6/3	Anthrosol
	Btz2	45-70	Loamy Sand	2.5YR 5/2	(salic)
Y13	Ahp	0-25	Sandy Loam	2.5YR 5/1	Plaggic
	Bt	25-40	Sandy Loam	2.5YR 6/4	Anthrosol
	B/C	40-64	Loamy Sand	2.5YR 5/4	(arenic)