



Supplement of

Tropical Andosol organic carbon quality and degradability in relation to soil geochemistry as affected by land use

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Supplement 1

Table S1. Weathering indices, some of estimated minerals, volcanic glass, and code of soil classification in the study sites. Data taken from Anindita et al. (2022)

Sites/ Depth	Weathering indices			Minerals					Volcanic glass	Code of Soil classification ¹
	SiO ₂ / (Al ₂ O ₃ + Fe ₂ O ₃ + TiO ₂)	CIA %	Amorphous materials	Quartz	Cristo balite	Tridy mite	1:1 clay mineral	Gibbsite	%	
Primary forest (NF-y)										
0-20	8.6	66	27.7	15.5	6.4	22.0	8.1	0.6	4.5	dy,se,vi,an CM (au,lo)
20-40	8.9	71	23.2	18.3	8.3	27.7	6.4	0.3	2.3	
subsoil	4.7	68	29.1	14.9	7.0	22.0	9.2	0.3	5.4	
Pine forest (PF-i)										
0-20	1.9	93	47.1	2.9	2.9	10.1	26.2	4.5	1.9	dy,se,an CM (au,ce)
20-40	1.5	97	42.9	1.9	3.1	8.6	26.5	3.6	1.9	
subsoil	1.3	99	48.1	0.5	2.6	4.4	29.9	8.5	0.9	
Pine forest (PF-o)										
0-20	0.8	98	49.7	2.1	5.4	3.5	18.0	14.9	0.9	dy,aa AN (ce,se)
20-40	0.9	98	50.6	1.4	3.9	3.1	19.0	15.6	1.6	
subsoil	1.1	99	47.0	2.3	4.3	4.9	25.7	9.1	0.9	
Agricultural land (AG-y)										
0-20	1.5	96	54.8	0.7	2.7	7.2	30.3	2.4	1.3	eu,aa AN (ce,ai,se)
20-40	1.5	97	52.3	1.4	2.8	7.6	31.5	2.3	1.8	
subsoil	1.7	96	54.7	3.2	2.7	8.0	23.7	3.0	1.7	
Agricultural land (AG-i)										
0-20	1.4	88	62.3	3.3	1.6	3.6	7.9	7.8	1.1	eu,aa AN (ce,ai,se)
20-40	1.0	95	64.5	2.1	2.0	2.7	11.8	10.4	1.6	
subsoil	1.1	94	65.0	1.9	2.4	2.3	11.0	8.8	0.1	
Agricultural land (AG-o)										
0-20	1.9	88	53.1	2.2	4.4	5.7	23.4	2.1	2.0	eu,aa AN (ce,ai,se)
20-40	1.7	92	50.2	1.8	5.5	5.5	26.8	2.4	1.9	
subsoil	1.6	96	46	0.8	5.0	5.3	34.2	1.8	1.3	

¹Soil classification is based on World Reference Base (IUSS, 2015)

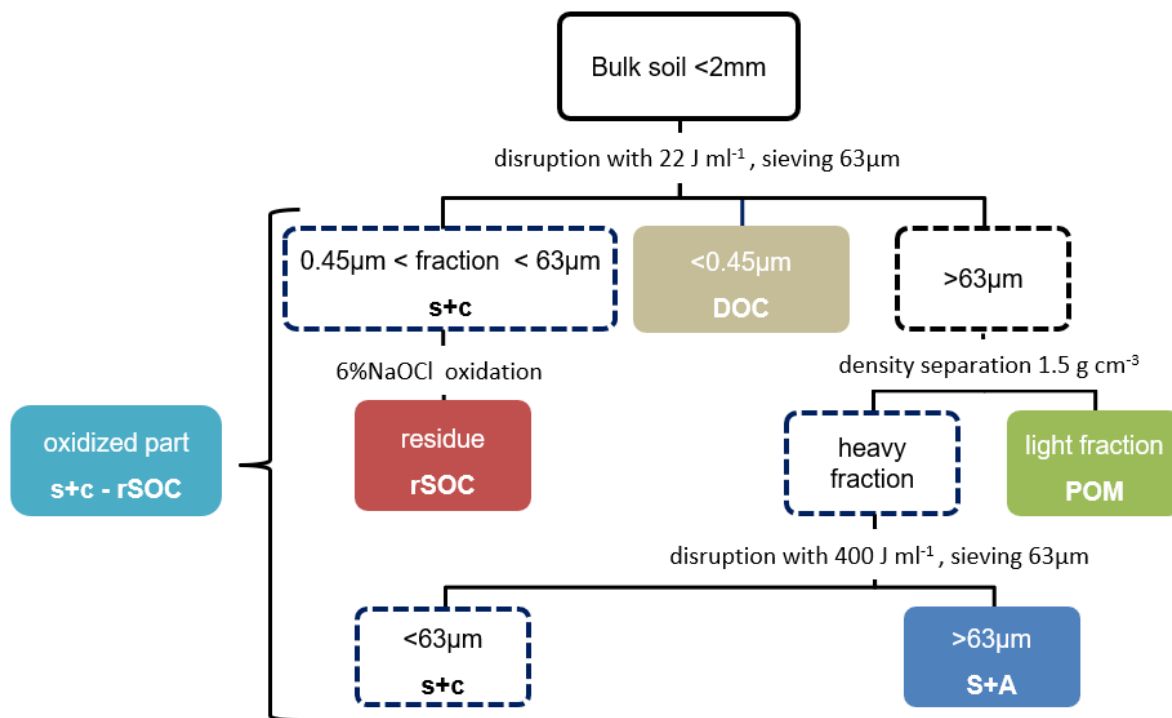


Fig. S1 Schematic of the used soil fractionation procedure, based on the procedure by Zimmerman et al. (2007) but adapted to use with volcanic soils: 1) Free particulate organic matter (POM) in the > 63µm fraction is separated by density at 1.5 g cm⁻³ instead of 1.8 g cm⁻³; 2) a second stronger ultrasonic dispersion step was introduced to separate the considerable > 63µm heavy fraction into silt and clay (s+c) and sand and stable aggregates (S+A). The amount of chemically oxidizable C contained in silt and clay is not measured but calculated from the difference in C contained in both isolated s+c fractions and the C in the 6%NaOCl oxidation residue.