



Supplement of

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

Sastrika Anindita et al.

Correspondence to: Sastrika Anindita (sastrika.anindita@gmail.com)

The copyright of individual parts of the supplement might differ from the article licence.

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		
	%				Weight %			%	
Primary forest (NF-y)									
0-20	8.6	66	27.7	15.5	6.4	22.0	8.1	0.6	4.5
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
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
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
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
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
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)

Supplement 2

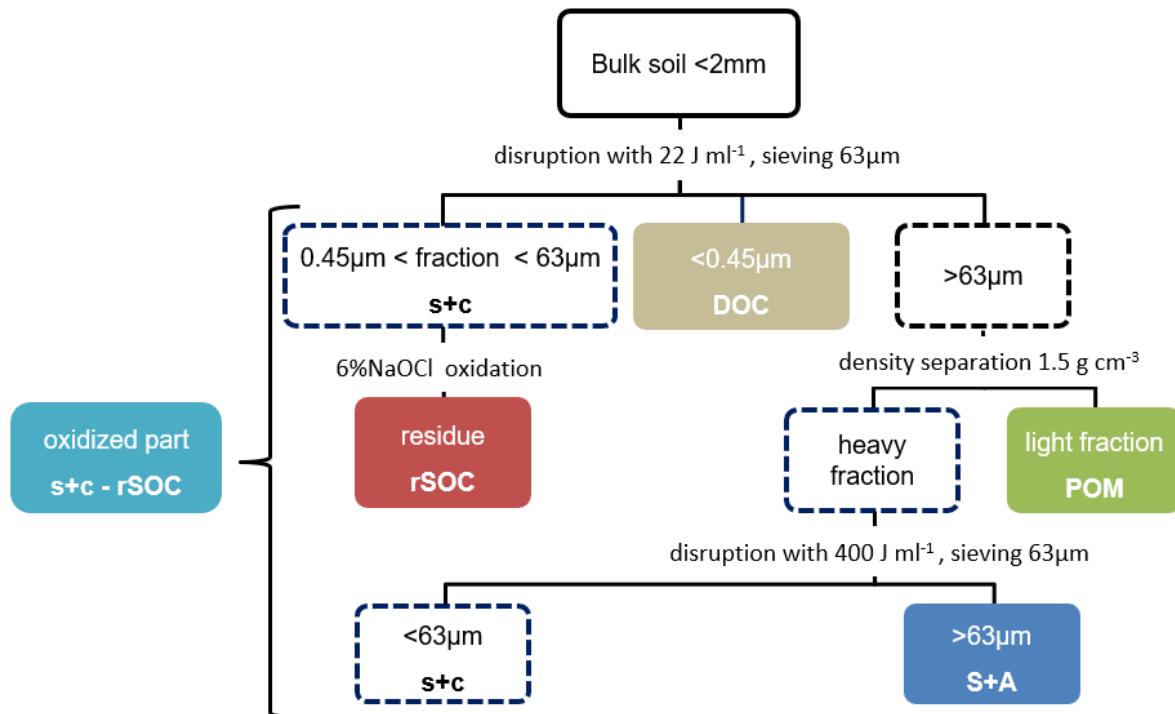


Fig. S1 Schematic of the used soil fractionation procedure, based on the procedure by Zimmerman et al. (2007) but adapted to use with volcanic soils: 1) Free particulate organic matter (POM) in the $> 63\mu\text{m}$ fraction is separated by density at 1.5 g cm^{-3} instead of 1.8 g cm^{-3} ; 2) a second stronger ultrasonic dispersion step was introduced to separate the considerable $> 63\mu\text{m}$ 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.