

Laboratorul de Mineralogie - Institutul Geologic al Romanie (Coupled TwoTheta/Theta)

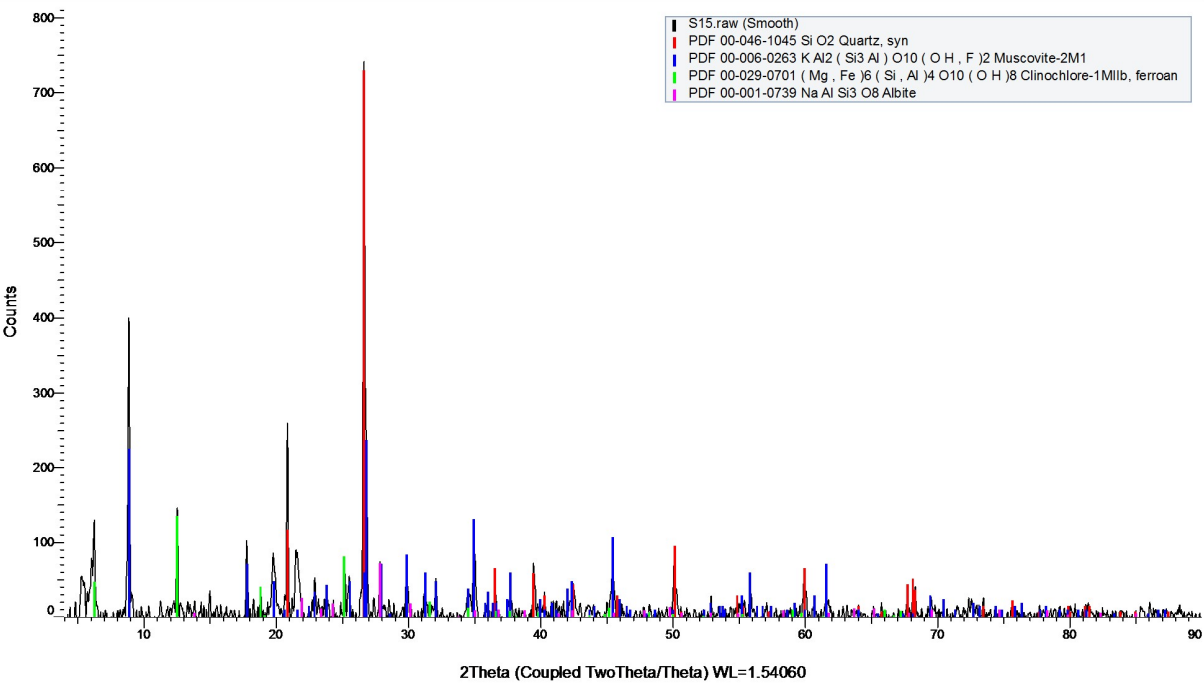


Figure S1: XRD powder pattern of sample S15.

Plagioclase index of alteration (Fedo, C.M.; Nesbitt, H.W.; Young, G.M. Unraveling the effects of potassium metasomatism in sedimentary rocks and paleosols, with implications for paleoweathering conditions and provenance. *Geology* **1995**, 23, 921–924. [https://doi.org/10.1130/00917613\(1995\)023<0921:UTEOPM>2.3.CO;2](https://doi.org/10.1130/00917613(1995)023<0921:UTEOPM>2.3.CO;2).)

$$PIA = [(Al_2O_3 - K_2O) * 100] / (Al_2O_3 + CaO + Na_2O - K_2O)$$

Na-plagioclase: quantitative data from XRD analyses

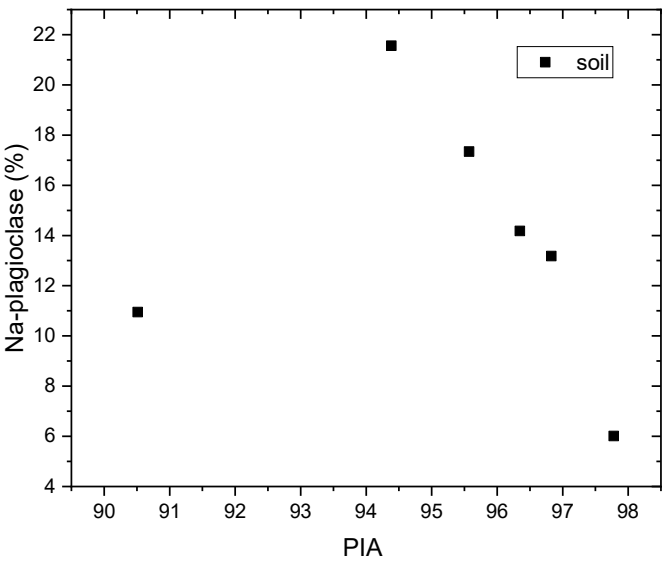


Figure S2: The relation trend between PIA and Na-Plg in soil from Mănăila area

Parker index of weathering (1970) (Parker, A. An index of weathering for silicate rocks. *Geol. Mag.* **1970**, 107, 501–504. <https://doi.org/10.1017/S0016756800058581>.)

$$WIP = (CaO/0.7) + (2*Na_2O/0.35) + (2*K_2O/0.25) + (MgO/0.9)*100$$

Chemical index of alteration (Nesbitt, H.W.; Young, G.M. Formation and diagenesis of weathering profiles. *J. Geol.* **1989**, 97, 129–147.)

$$CIA = (Al_2O_3 * 100) / (Al_2O_3 + CaO + Na_2O + K_2O)$$

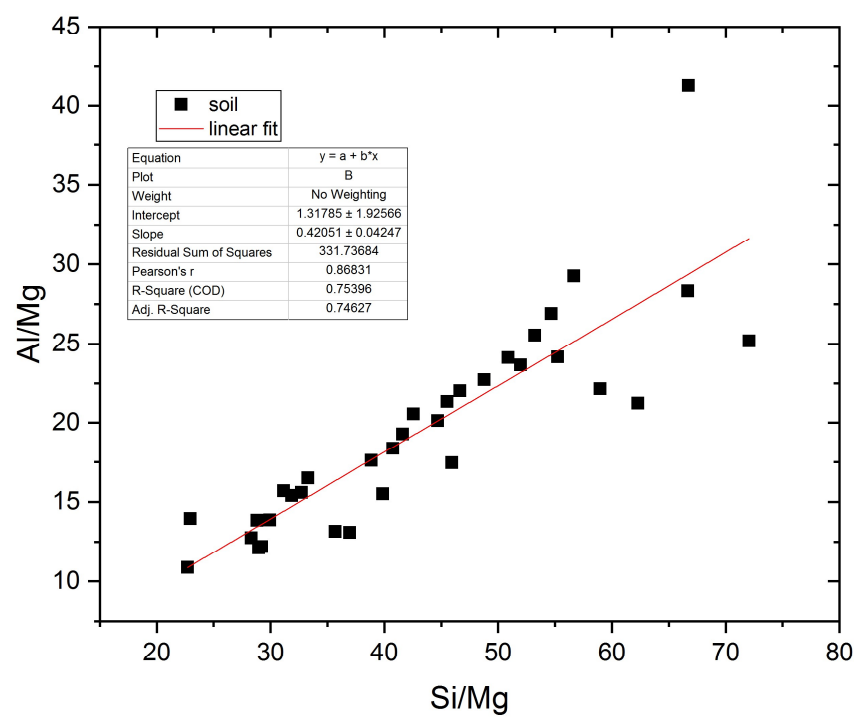


Figure S3: The relation between Si/Mg and Al/Mg molar ratios in Mănăila soil

Table S1. Correlations of major oxides of soil from Mănăila area

oxides	SiO ₂	TiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MgO	MnO	CaO	Na ₂ O	K ₂ O	P ₂ O ₅
SiO ₂	1									
TiO ₂	-0.57	1.00								
Al ₂ O ₃	-0.30	0.35	1.00							
Fe ₂ O ₃	-0.63	0.69	0.55	1.00						
MgO	0.23	-0.16	0.32	-0.08	1.00					
MnO	-0.39	0.70	0.48	0.65	0.27	1.00				
CaO	0.17	-0.03	-0.39	-0.16	0.05	0.27	1.00			
Na ₂ O	-0.06	-0.04	-0.20	-0.29	-0.41	-0.22	-0.01	1.00		
K₂O	0.27	-0.19	-0.04	-0.48	0.26	-0.11	-0.23	0.01	1.00	
P ₂ O ₅	-0.53	0.59	0.27	0.76	-0.10	0.73	0.32	-0.22	-0.39	1.00

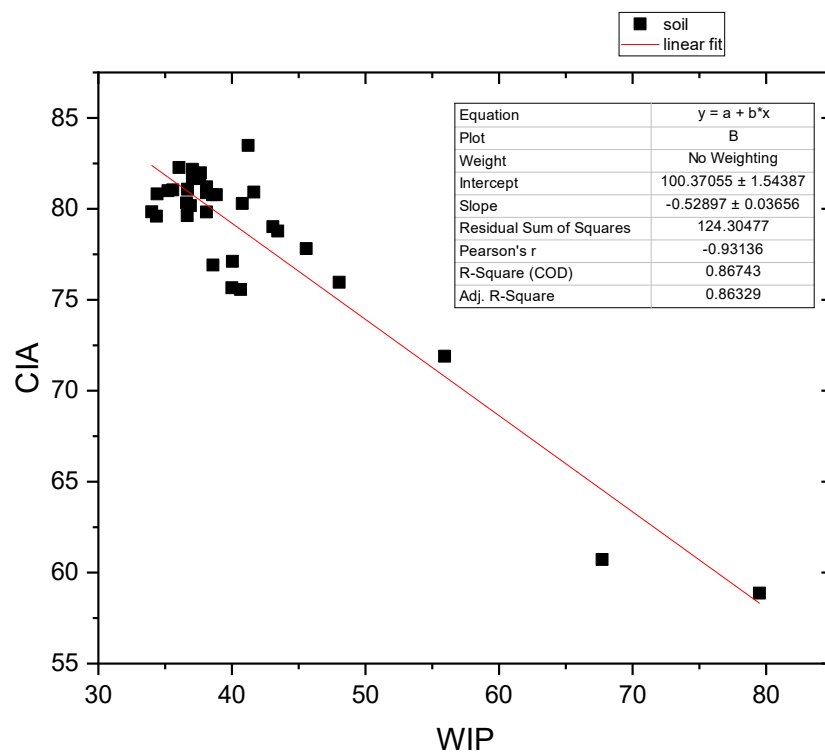


Figure S4: The relation between WIP and CIA in soil from Mănăila area