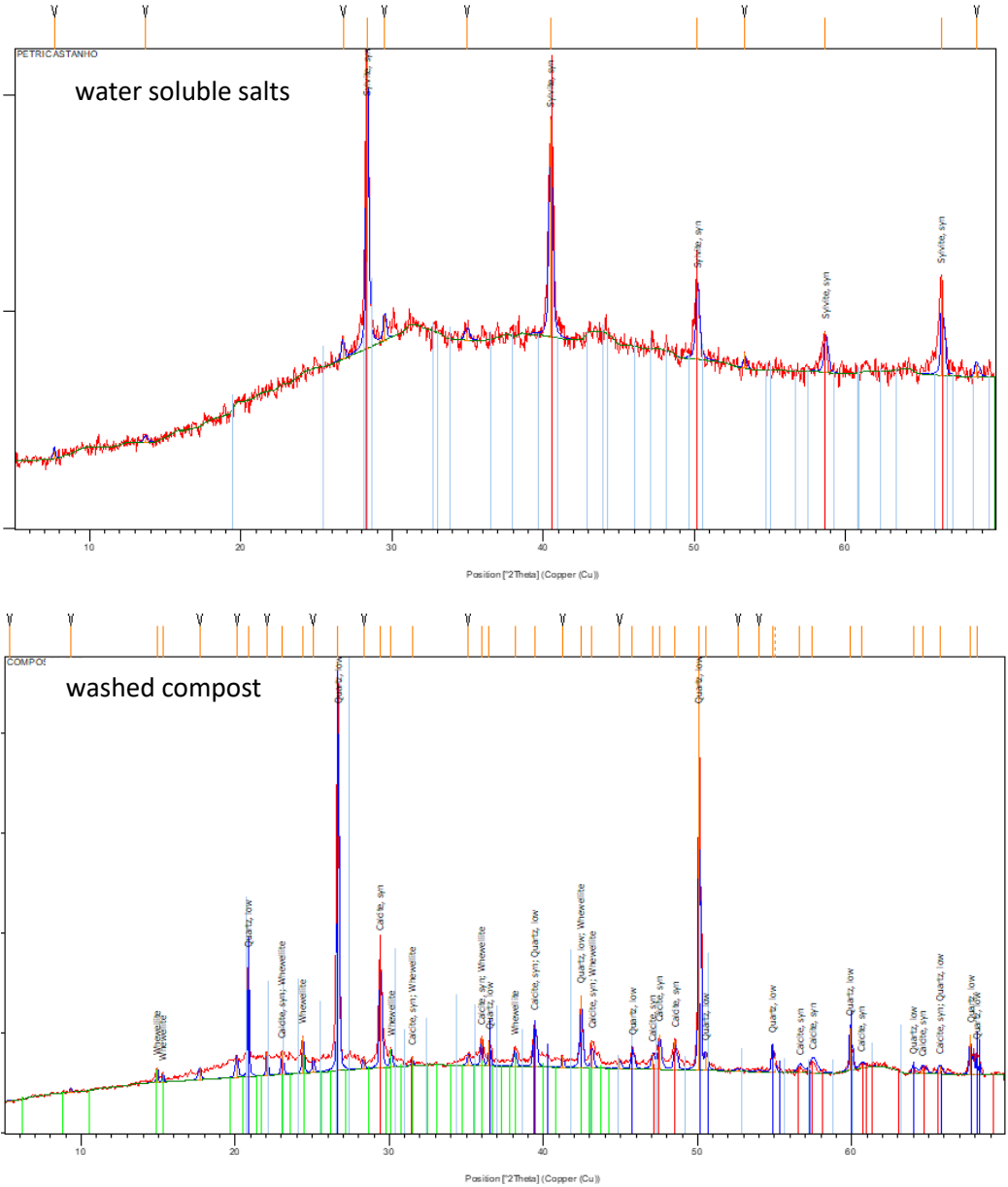


Supplementary data section





1375	C-H deformation
1428	CH <sub>2</sub> scissoring

**Table S2** – FTIR bands attribution for humic and fulvic substances in soils (adapted from [25]).

Wavenumber (cm <sup>-1</sup> )	Attribution
3700-3620	Free OH stretch
3400-3200	OH stretch; intra and inter molecular N-H; amine NH and phenol OH
1660-1630	Amide C=O stretch; quinone C=O/or C=O to H in paired ketones; C=C aromatic
1600-1580	C=C aromatic group stretching
1430	Stretching of methyl and methylene C-H bonds
1400-1380	Aliphatic C-H stretch
<1000	C-O stretches; aromatic C-H corresponding to polysaccharides and carbohydrates

## References

- [25] Machado W, Franchini JC, de Fátima Guimarães M, Filho JT. Spectroscopic characterization of humic and fulvic acids in soil aggregates, Brazil. *Heliyon* 2020;6:e04078. <https://doi.org/10.1016/J.HELİYON.2020.E04078>.
- [40] Kurian JK, Gariepy Y, Orsat V, Raghavan GSV. Microwave-assisted lime treatment and recovery of lignin from hydrothermally treated sweet sorghum bagasse. *Biofuels* 2015;6:341–55. <https://doi.org/10.1080/17597269.2015.1110775>.