

Quantification and characterisation of microplastics in organic waste-derived soil amendments in Scotland

Alessandro Rimmaudo ^a, Alan Cundill ^b, Ian Singleton ^a, Donald Morrison ^a,
Aimeric Blaud ^{a*}

^a Centre for Conservation and Restoration Science, School of Applied Sciences, Edinburgh Napier University, 9 Sighthill Ct, Edinburgh EH11 4BN, Edinburgh, Scotland, UK

^b Scottish Environment Protection Agency, Inverdee House, Baxter Street, Aberdeen AB11 9QA, Scotland, UK

*Corresponding author.

E-mail addresses: a.rimmaudo@napier.ac.uk (A. Rimmaudo), a.blaud@napier.ac.uk (A. Blaud), i.singleton@napier.ac.uk (I. Singleton), d.morrison2@napier.ac.uk (D. Morrison), Alan.Cundill@sepa.org.uk (A. Cundill).

Supplementary Materials

Table SI I. Percentage of microplastic particles extracted across all four waste samples (each sample in triplicate) broken down by colour and shape. Total number of microplastics particles $n = 1285$.

	Overall (%)	Fibre (%)	Fragment (%)	Bead (%)	Other shape (%)
Blue	39.4	23.7	68.3	8.6	54.7
White/transparent	34.0	53.1	5.1	50.5	3.8
Black	10.8	15.7	0.9	24.8	5.7
Red	11.2	6.1	17.3	13.3	20.8
Green	3.1	0.9	6.4	1.0	7.5
Other Colour	1.5	0.6	2.0	1.9	7.5

Figure SI I. Light microscopy of 50 °C oven-dried waste material samples before extraction. (A) organic matter aggregates and large amounts of fibres in BS2; (B) organic matter aggregates and mineral particles in compost; (C) Organic matter aggregate in BS2 with fibres embedded; (D) Example of partially degraded plant matter seen in compost.

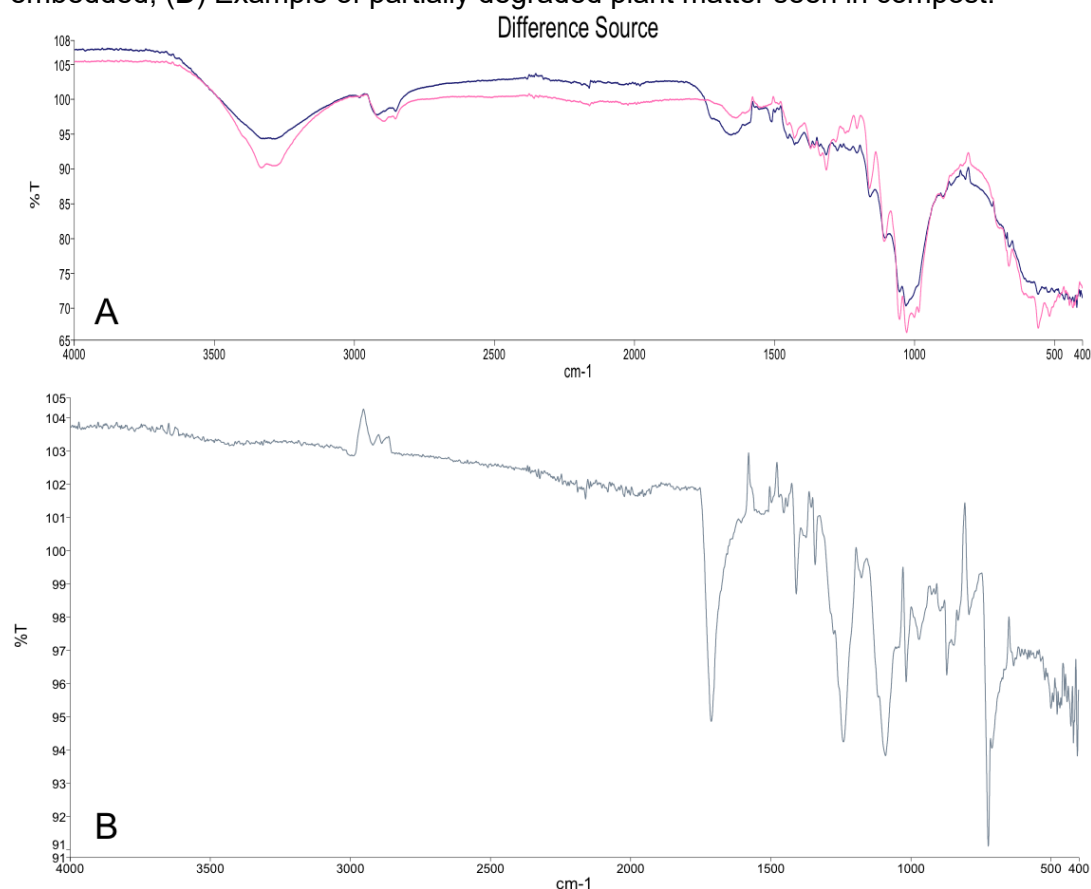


Figure SI II. Example FTIR spectra of suspected natural fibres in biosolid. (A) comparison between cotton wool (in pink) and suspected natural fibre bundle extracted from BS2 (in blue), (B) commercially purchased polyester fibres.