



Supplement of

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Supplement

Polyester microplastic fibers affect soil physical properties and erosion as a function of soil type

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Table S1. *P-values* for the effect of soil type and polyester MP fibers (MP) on the measured soil properties and erosion indicators after an incubation period of six months.

Parameters	Soil type	MP	Soil type*MP
Soil bulk density	<0.0001	0.0019	0.0005
P _{mac}	0.0894	0.7256	0.0347
AC	0.2031	0.0051	0.0044
PAWC	<0.0001	0.3396	0.0001
NFA _{dry}	<0.0001	0.0258	0.3136
WFA _{wet}	<0.0001	0.0364	0.1591
MWD _{dry}	<0.0001	0.0331	0.3561
MWD _{wet}	<0.0001	0.7761	0.8238
Surface runoff	0.5555	0.7912	0.5232
Percolation	0.7997	0.4785	0.6335
Soil erosion	<0.0001	0.6467	<0.0001
Sediment concentration	<0.0001	0.6793	<0.0001

P_{mac}, Soil macroporosity index; AC, Air capacity; PAWC, Plant available water capacity; NFA, newly formed aggregates calculated from dry (NFA_{dry}) and wet (NFA_{wet}) sieving (> 600 µm); MWD, mean weight diameter calculated from dry (MWD_{dry}) and wet (MWD_{wet}) sieving.

Table S2. Soil particles distribution in the various class sizes of sieves obtained through the dry sieving. Mean data of Control (Ctr), polyester MP fibers added treatment (MP), and respective *p-value*

Size classes	Vertisol			Entisol			Anfisol		
	Ctr	MP	<i>p-value</i>	Ctr	MP	<i>p-value</i>	Ctr	MP	<i>p-value</i>
<0.106 mm	6.9	7.1	0.473	16.1	18.5	0.506	14.2	22.1	0.034
0.106-0.25 mm	16.3	18.6	0.238	30.4	32.1	0.373	41.6	40.6	0.759
0,25-0,5 mm	29.5	36.5	0.012	29.8	29.3	0.656	26.3	25.1	0.597
0.5-0.6 mm	13.6	14.9	0.118	11.6	11.7	0.919	5.3	5.4	0.351
0.6-1 mm	13.1	11.7	0.176	6.7	5.6	0.396	5.2	3.1	0.001
1-2 mm	11.7	6.4	0.005	4.2	1.6	0.004	4.9	1.8	0.000
>2 mm	8.9	4.8	0.230	1.2	1.2	0.745	2.5	1.9	0.515

Table S3. Water stable aggregates in the various class sizes of sieves obtained through the wet sieving. Mean data of Control (Ctr), polyester MP fibers added treatment (MP), and respective *p-value*

Size classes	Vertisol			Entisol			Anfisol		
	Ctr	MP	<i>p-value</i>	Ctr	MP	<i>p-value</i>	Ctr	MP	<i>p-value</i>
<0.106 mm	39.7	39.2	0.935	46.5	46.8	0.920	51.7	52.2	0.880
0.106-0.25 mm	27.4	33.8	0.343	26.8	27.0	0.979	34.6	32.1	0.339
0,25-0,5 mm	26.9	21.1	0.325	19.6	18.7	0.446	12.2	13.7	0.186
0.5-0.6 mm	4.5	3.4	0.456	5.8	6.2	0.798	1.3	1.7	0.003
0.6-1 mm	1.5	2.5	0.044	1.3	1.3	0.952	0.2	0.23	0.468
1-2 mm	0.00	0.01	0.001	0.00	0.03	<0.001	0.00	0.03	<0.001
>2 mm	0.00	0.01	0.003	0.00	0.03	<0.001	0.00	0.04	0.003