

Supplementary Material

Suitability of Different Agricultural and Urban Organic Wastes as Feedstocks for the Production of Biochar—Part 2: Agronomical Evaluation as Soil Amendment

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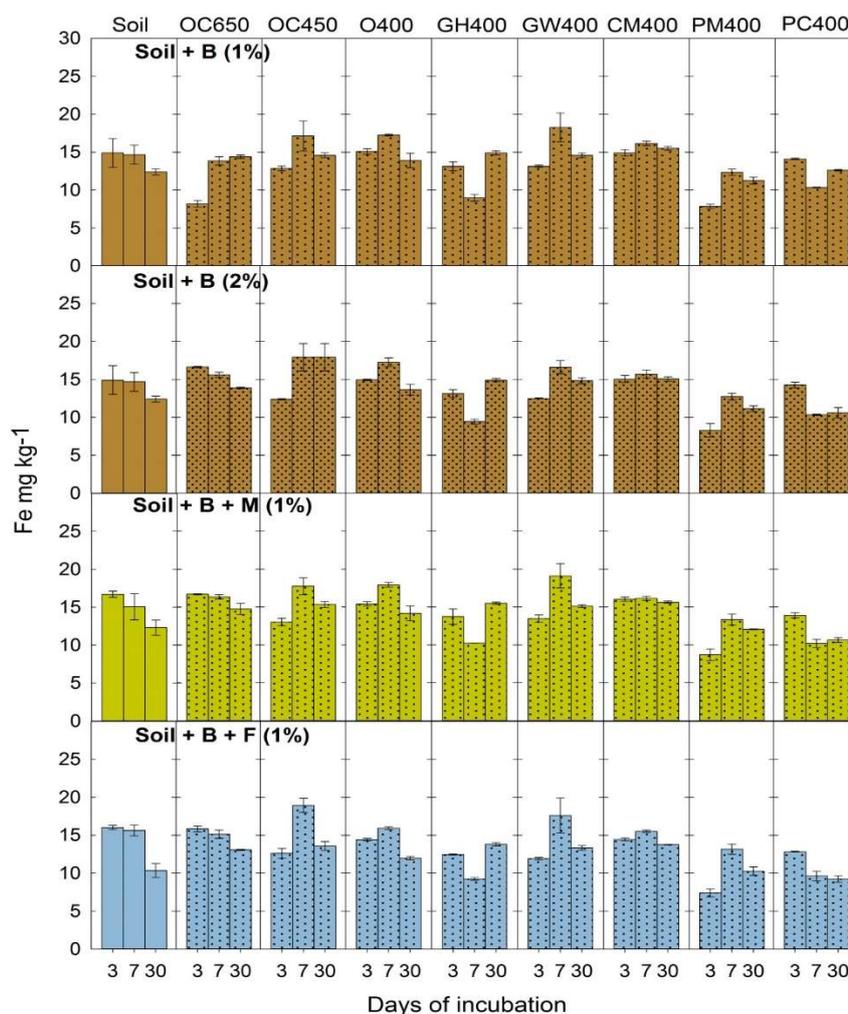


Figure S1: Concentration of DTPA- extractable Fe in soil during the incubation. The different treatments included: a control (soil without any amendment), soil with biochars at two doses (S+B (1%) and S+B (2%)), soil with manure (S+M (1%)) or mineral fertiliser (S+F (1%)) or soil with biochar in combination with manure (S+B+M (1%)) or with mineral fertiliser (S+B+F (1%)). Error bars represent standard deviation (n=3).

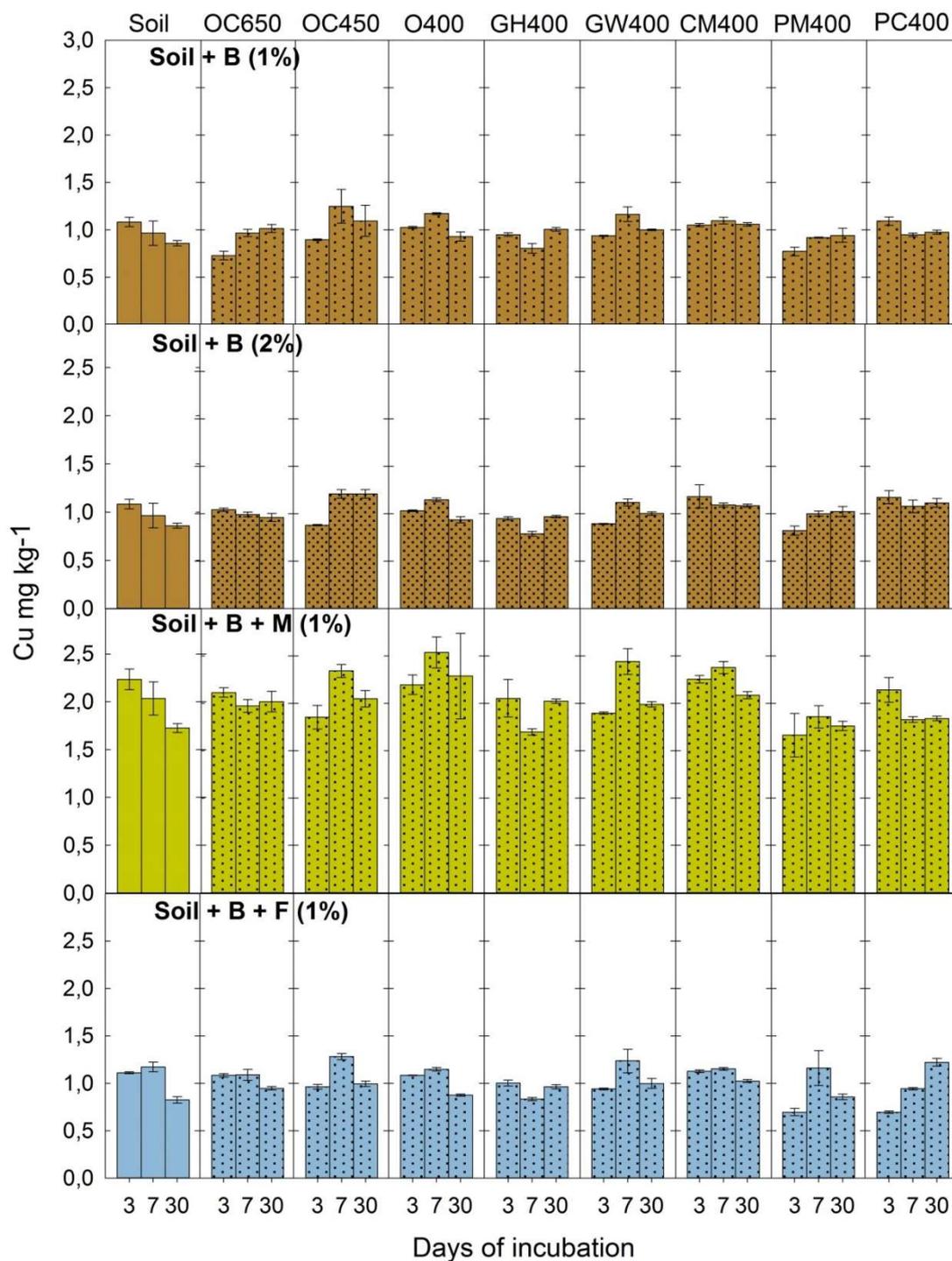


Figure S2: Concentration of DTPA- extractable Cu in soil during the incubation. The different treatments included: a control (soil without any amendment), soil with biochars at two doses (S+B (1%) and S+B (2%)), soil with manure (S+M (1%)) or mineral fertiliser (S+F (1%)) or soil with biochar in combination with manure (S+B+M (1%)) or with mineral fertiliser (S+B+F (1%)). Error bars represent standard deviation (n=3).

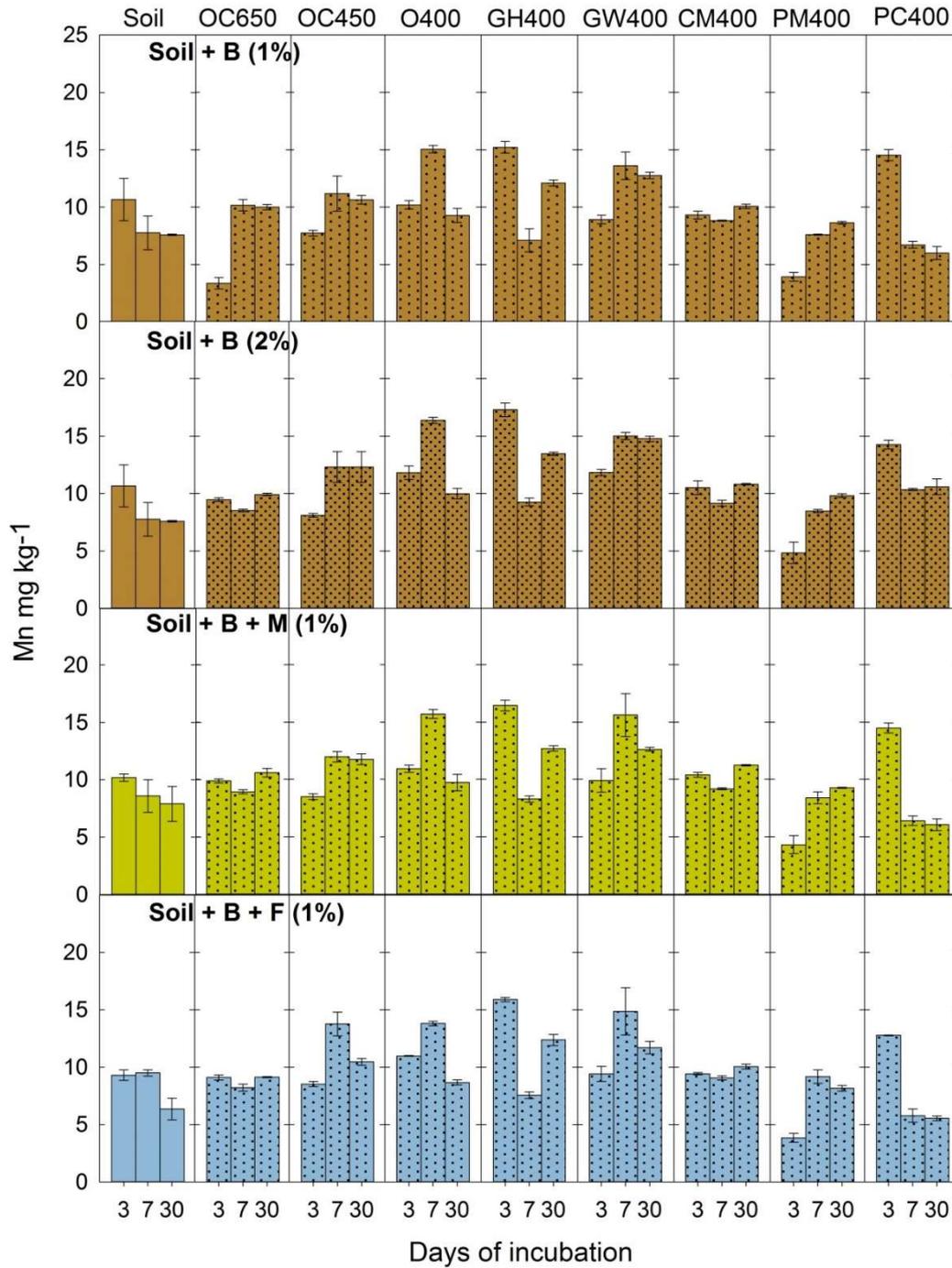


Figure S3: Concentration of DTPA- extractable Mn in soil during the incubation. The different treatments included: a control (soil without any amendment), soil with biochars at two doses (S+B (1%) and S+B (2%)), soil with manure (S+M (1%)) or mineral fertiliser (S+F (1%)) or soil with biochar in combination with manure (S+B+M (1%)) or with mineral fertiliser (S+B+F (1%)). Error bars represent standard deviation (n=3).

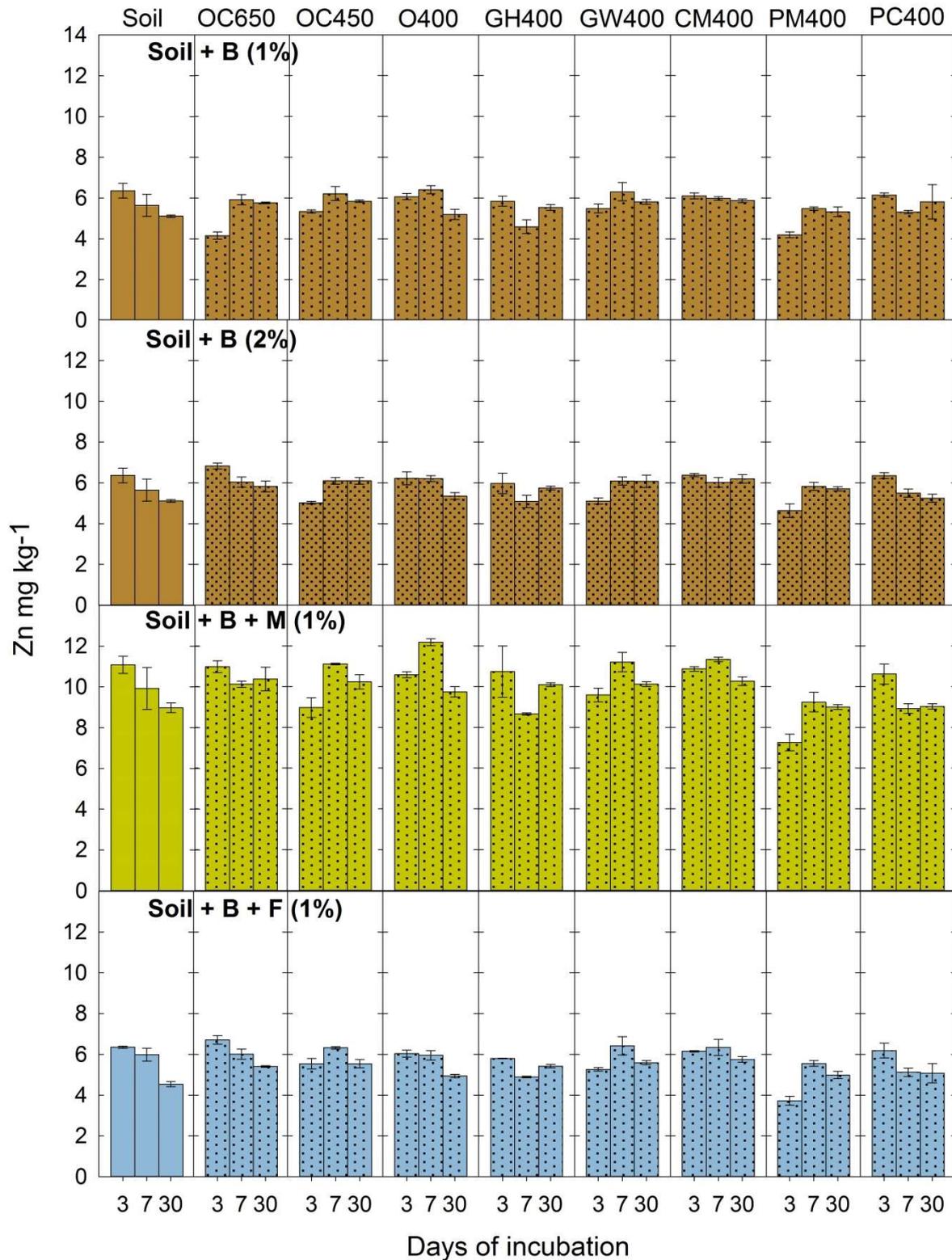


Figure S4: Concentration of DTPA- extractable Zn in soil during the incubation. The different treatments included: a control (soil without any amendment), soil with biochars at two doses (S+B (1%) and S+B (2%)), soil with manure (S+M (1%)) or mineral fertiliser (S+F (1%)) or soil with biochar in combination with manure (S+B+M (1%)) or with mineral fertiliser (S+B+F (1%)). Error bars represent standard deviation (n=3).

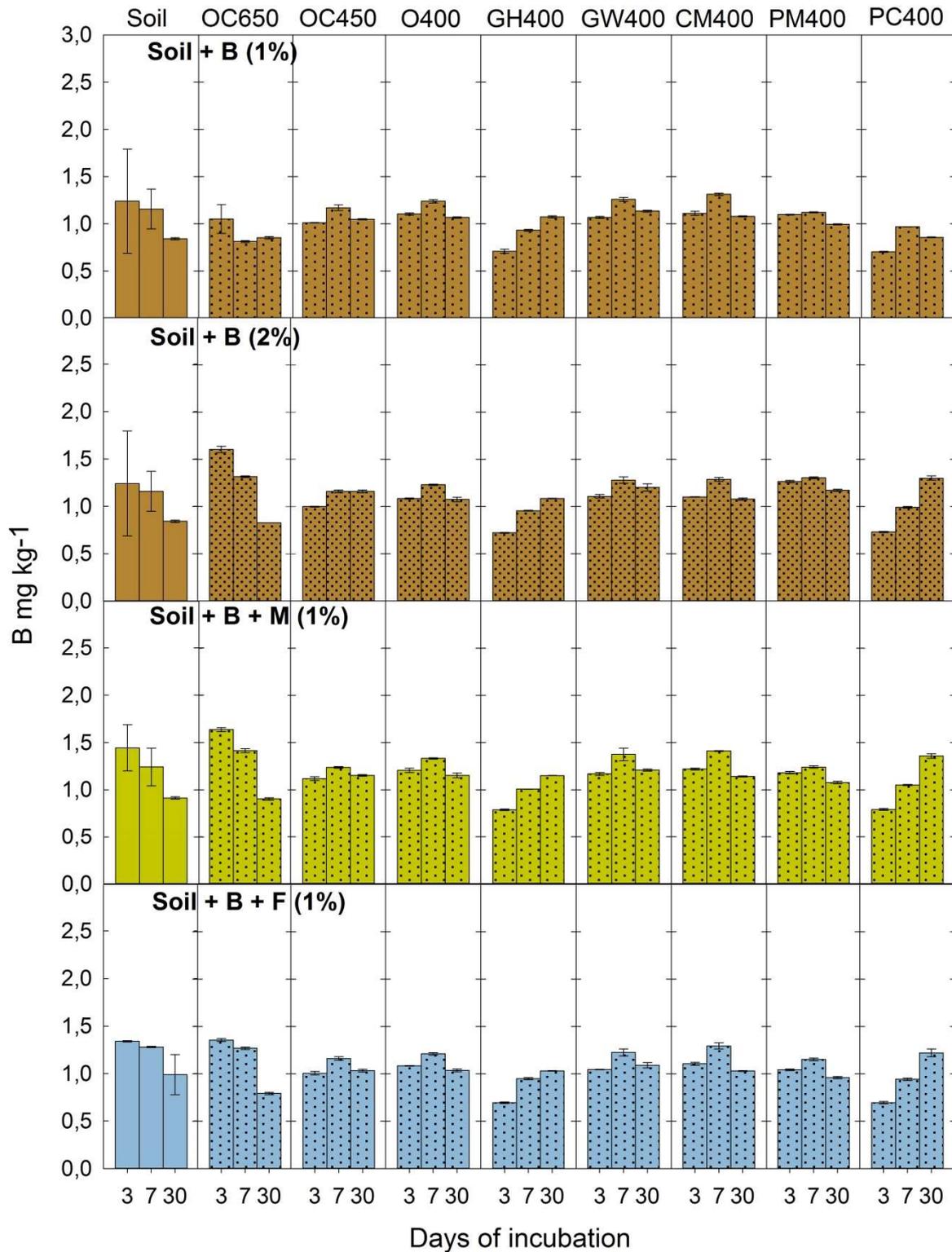


Figure S5: Concentration of DTPA- extractable B in soil during the incubation. The different treatments included: a control (soil without any amendment), soil with biochars at two doses (S+B (1%) and S+B (2%)), soil with manure (S+M (1%)) or mineral fertiliser (S+F (1%)) or soil with biochar in combination with manure (S+B+M (1%)) or with mineral fertiliser (S+B+F (1%)). Error bars represent standard deviation (n=3).

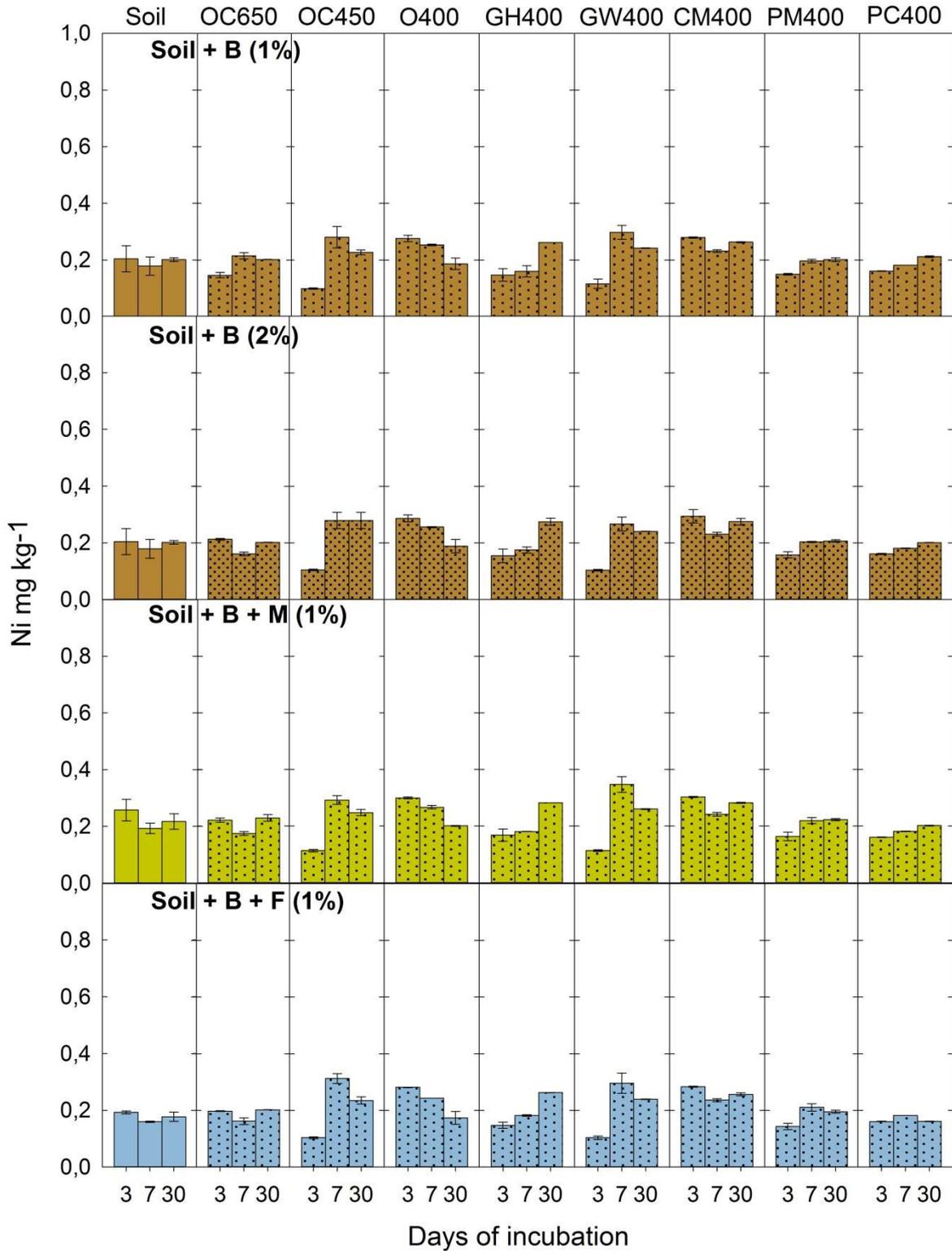


Figure S6: Concentrations of DTPA- extractable Ni in soil during the incubation The different treatments included: a control (soil without any amendment), soil with biochars at two doses (S+B (1%) and S+B (2%)), soil with manure (S+M (1%)) or mineral fertiliser (S+F (1%)) or soil with biochar in combination with manure (S+B+M (1%)) or with mineral fertiliser (S+B+F (1%)). Error bars represent standard deviation (n=3).

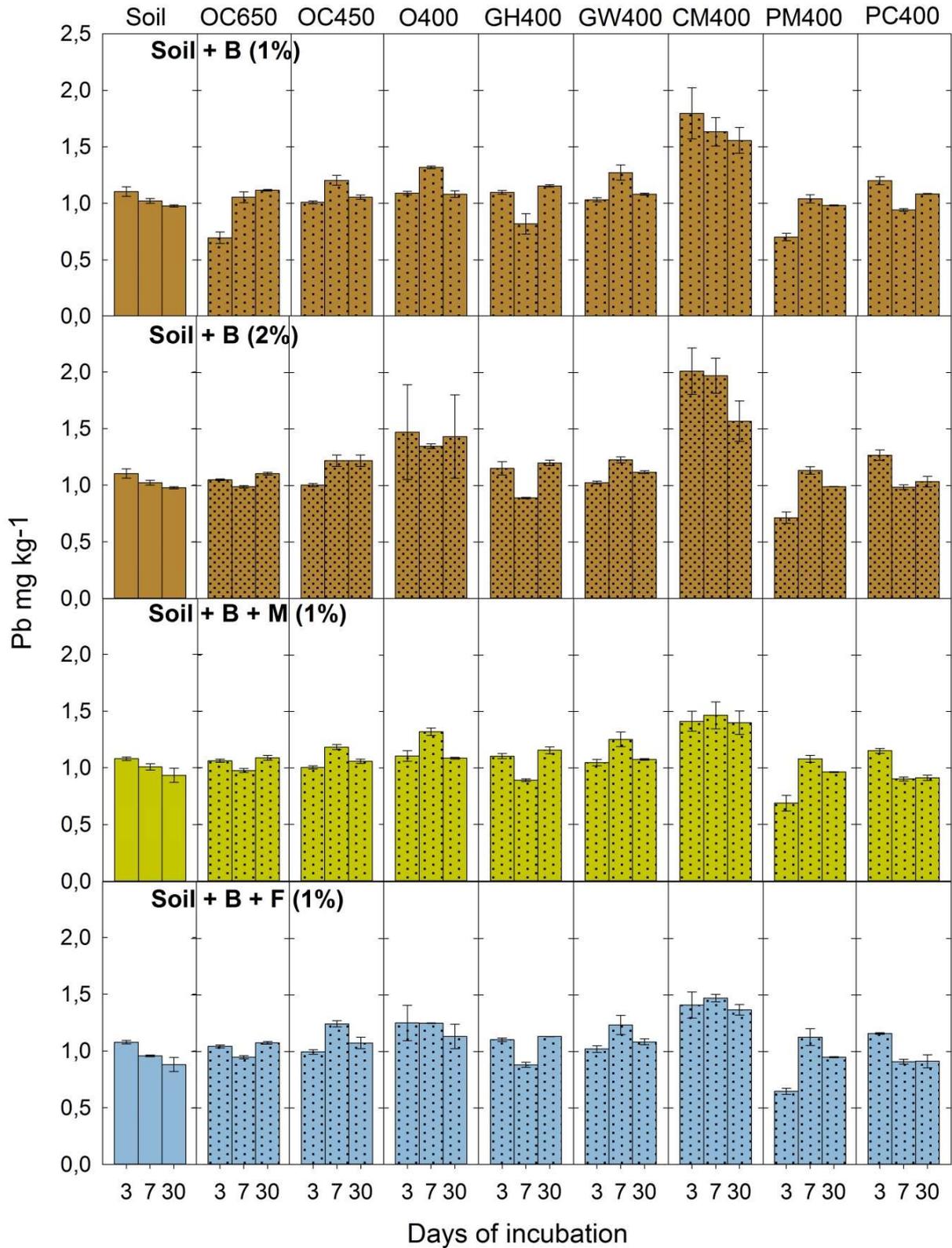


Figure S7: Concentration of DTPA- extractable Pb in soil during the incubation. The different treatments included: a control (soil without any amendment), soil with biochars at two doses (S+B (1%) and S+B (2%)), soil with manure (S+M (1%)) or mineral fertiliser (S+F (1%)) or soil with biochar in combination with manure (S+B+M (1%)) or with mineral fertiliser (S+B+F (1%)). Error bars represent standard deviation (n=3)

Table S1: Percentage of DTPA-extractable micronutrients (Fe, Cu, Mn, Zn and B) respect to total concentration in biochars.

Biochar	Fe	Cu	Mn	Zn	B
	%				
OC650	0.9	7.1	12.8	39.5	1.5
OC450	0.6	4.4	16.0	17.9	6.6
O400	0.0	2.2	3.6	7.5	2.9
GH400	0.0	2.8	22.3	5.2	3.4
GW400	0.0	1.7	24.2	2.7	5.5
CM400	1.1	1.5	2.0	1.1	2.8
PM400	0.1	3.0	12.5	4.8	8.7
PC400	0.2	2.8	5.7	2.8	7.1

Table S2: Percentage of DTPA-extractable heavy metals (Cd, Cr, Ni and Pb) respect to the total concentration in biochars.

Biochar	Cd	Cr	Ni	Pb
	%			
OC650	BDL ¹	BDL	4.8	8.3
OC450	BDL	BDL	2.1	9.1
O400	BDL	BDL	1.2	15.6
GH400	BDL	BDL	1.1	10.3
GW400	6.3	0.1	0.5	2.9
CM400	7.9	0.0	0.4	10.2
PM400	BDL	BDL	0.5	4.2
PC400	0.7	BDL	0.7	5.0

¹BDL: total concentration in biochars were below the detection limit



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