

Is There Anybody Out There? Substrate Availability Controls Microbial Activity outside of Hotspots in Subsoils

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Table S1. Mean relative change in enzyme activity given as % of initial activity and coefficient of variation in % of glucosidase, chitinase and acid phosphatase induced by glucose additions in hotspots (Hot) and non-hotspots (nHot).

Depth	Subsample	Location	Enzyme	Mean relative change in % of initial activity	Coefficient of variation in %
2–11 cm	1	Hot	- glucosidase	1.3	28.4
2–11 cm	2	Hot	- glucosidase	3.1	22.2
2–11 cm	3	Hot	- glucosidase	1.1	10.6
2–11 cm	1	nHot	- glucosidase	51.2	28.3
2–11 cm	2	nHot	- glucosidase	25.7	31.6
2–11 cm	3	nHot	- glucosidase	30.1	22.0
2–11 cm	1	Hot	chitinase	-12.4	15.1
2–11 cm	2	Hot	chitinase	-4.3	29.7
2–11 cm	3	Hot	chitinase	-3.2	18.6
2–11 cm	1	nHot	chitinase	25.3	24.2
2–11 cm	2	nHot	chitinase	9.6	19.9
2–11 cm	3	nHot	chitinase	12.6	27.1
2–11 cm	1	Hot	phosphatase	0.9	23.3
2–11 cm	2	Hot	phosphatase	3.6	26.7
2–11 cm	3	Hot	phosphatase	2.1	37.1
2–11 cm	1	nHot	phosphatase	72.3	20.1
2–11 cm	2	nHot	phosphatase	49.0	18.7
2–11 cm	3	nHot	phosphatase	53.5	27.2
15–26 cm	1	Hot	- glucosidase	-12.3	25.1
15–26 cm	2	Hot	- glucosidase	-18.8	24.8

15–26 cm	3	Hot	- glucosidase	-8.4	18.7
15–26 cm	1	nHot	- glucosidase	124.4	22.9
15–26 cm	2	nHot	- glucosidase	86.0	25.4
15–26 cm	3	nHot	- glucosidase	72.6	30.0
15–26 cm	1	Hot	chitinase	0.1	30.6
15–26 cm	2	Hot	chitinase	0.1	23.5
15–26 cm	3	Hot	chitinase	0.2	37.4
15–26 cm	1	nHot	chitinase	199.3	29.2
15–26 cm	2	nHot	chitinase	116.0	28.7
15–26 cm	3	nHot	chitinase	148.3	23.5
Depth	Subsample	Location	Enzyme	Mean relative change in % of initial activity	Coefficient of variation in %
15–6 cm	1	Hot	phosphatase	61.0	34.6
15–26 cm	2	Hot	phosphatase	38.6	28.7
15–26 cm	3	Hot	phosphatase	54.9	26.1
15–26 cm	1	nHot	phosphatase	166.9	24.1
15–26 cm	2	nHot	phosphatase	147.8	22.8
15–26 cm	3	nHot	phosphatase	158.1	26.4
60–71 cm	1	Hot	- glucosidase	10.7	42.4
60–71 cm	2	Hot	- glucosidase	30.7	35.2
60–71 cm	3	Hot	- glucosidase	25.3	38.1
60–71 cm	1	nHot	- glucosidase	711.7	40.1
60–71 cm	2	nHot	- glucosidase	945.7	44.2
60–71 cm	3	nHot	- glucosidase	1069.0	56.6
60–71 cm	1	Hot	chitinase	66.9	41.7
60–71 cm	2	Hot	chitinase	15.3	37.5
60–71 cm	3	Hot	chitinase	44.8	26.4
60–71 cm	1	nHot	chitinase	668.1	49.8
60–71 cm	2	nHot	chitinase	401.3	54.2
60–71 cm	3	nHot	chitinase	327.1	34.9
60–71 cm	1	Hot	phosphatase	100.1	36.2
60–71 cm	2	Hot	phosphatase	65.0	21.1
60–71 cm	3	Hot	phosphatase	71.2	29.3
60–71 cm	1	nHot	phosphatase	312.7	42.4
60–71 cm	2	nHot	phosphatase	215.0	49.3
60–71 cm	3	nHot	phosphatase	231.6	38.6

80–91 cm	1	Hot	- glucosidase	19.6	29.9
80–91 cm	2	Hot	- glucosidase	31.0	44.7
80–91 cm	3	Hot	- glucosidase	46.4	25.3
80–91 cm	1	nHot	- glucosidase	256.3	54.1
80–91 cm	2	nHot	- glucosidase	115.2	44.2
80–91 cm	3	nHot	- glucosidase	301.7	35.7
80–91 cm	1	Hot	chitinase	124.6	52.6
80–91 cm	2	Hot	chitinase	88.6	33.7
80–91 cm	3	Hot	chitinase	62.7	40.6
80–91 cm	1	nHot	chitinase	347.6	48.8
80–91 cm	2	nHot	chitinase	227.8	33.0
80–91 cm	3	nHot	chitinase	240.0	42.4
80–91 cm	1	Hot	phosphatase	45.2	34.1
80–91 cm	2	Hot	phosphatase	115.5	37.4
80–91 cm	3	Hot	phosphatase	150.2	50.1

Depth	Subsample	Location	Enzyme	Mean relative change in % of initial activity	Coefficient of variation in %
80–91 cm	1	nHot	phosphatase	451.3	49.9
80–91 cm	2	nHot	phosphatase	400.0	54.1
80–91 cm	3	nHot	phosphatase	472.1	39.2
150–161 cm	1	Hot	- glucosidase	-52.8	30.4
150–161 cm	2	Hot	- glucosidase	-18.7	44.6
150–161 cm	3	Hot	- glucosidase	-29.4	50.8
150–161 cm	1	nHot	- glucosidase	323.9	56.6
150–161 cm	2	nHot	- glucosidase	347.6	48.7
150–161 cm	3	nHot	- glucosidase	289.3	61.3
150–161 cm	1	Hot	chitinase	-112.6	55.4
150–161 cm	2	Hot	chitinase	-52.5	60.1
150–161 cm	3	Hot	chitinase	-98.2	48.0
150–161 cm	1	nHot	chitinase	101.5	34.3
150–161 cm	2	nHot	chitinase	55.0	39.7
150–161 cm	3	nHot	chitinase	48.7	47.9
150–161 cm	1	Hot	pho	-71.0	60.5
150–161 cm	2	Hot	pho	-36.8	54.2

150–161 cm	3	Hot	pho	-28.2	45.9
150–161 cm	1	nHot	pho	62.4	39.9
150–161 cm	2	nHot	pho	39.1	51.6
150–161 cm	3	nHot	pho	55.3	45.0

Table S2. Mean relative change of enzyme activities induced by water in initial hotspots and initial non-hotspots of subsoils from five different depths given as % (n=5). Changes were evaluated as significant when $p < 0.05$ as tested by paired t-test.

Location	Parameter	-glucosidase	chitinase	acid phosphatase
initial hotspot	Mean	33.1	19.3	-13.5
	Std. Error	19.7	13.2	14.3
	<i>p-value</i>	0.20	0.20	0.31
initial non-hotspot	Mean	17.6	6.9	9.7
	Std. Error	13.3	7.8	6.8
	<i>p-value</i>	0.26	0.49	0.27