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Supplement of

Assessing soil fertilization effects using time-lapse electromagnetic induction

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SUPPLEMENTARY DATA

Table S1: Table of significant differences of each treatment's EMI configuration (column) relative to the control plot on the same time (row). The values indicate the *p* values and are coloured whereas dark green differs highly significantly ($p<0.001$), light green differs significantly ($p<0.05$) and yellow differs low significantly ($p<0.2$). The colors for orange ($p<0.5$) light red ($p<0.9$) and dark red ($p>0.9$) are used to highlight nonsignificant differences.

	Na						Nb						Nc						KCla						KClb						KClc					
DAF	VCP 1	VCP2	VCP 3	HCP 1	HCP 2	HCP 3	VCP 1	VCP2	VCP 3	HCP 1	HCP 2	HCP 3	VCP 1	VCP2	VCP 3	HCP 1	HCP 2	HCP 3	VCP 1	VCP2	VCP 3	HCP 1	HCP 2	HCP 3	VCP 1	VCP2	VCP 3	HCP 1	HCP 2	HCP 3	VCP 1	VCP2	VCP 3	HCP 1	HCP 2	HCP 3
0	0.37	1.00	0.99	1.00	1.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	0.95	1.00	0.77	0.67	0.32	0.95	0.81	0.82	1.00	0.98	0.99	0.54	0.84	0.44	1.00	0.66	0.30
8	0.37	0.39	0.54	0.53	0.98	0.98	0.20	0.41	0.79	0.61	0.99	0.99	0.00	0.00	0.00	0.00	0.02	0.01	0.12	0.27	0.38	0.70	0.97	1.00	0.00	0.00	0.00	0.01	1.00	0.12	0.00	0.00	0.00	0.00	0.00	1.00
21	0.43	0.45	0.41	0.55	0.99	0.99	0.08	0.04	0.17	0.10	0.10	0.96	0.00	0.00	0.00	0.00	0.00	0.01	0.09	0.16	0.12	0.09	0.78	1.00	0.00	0.00	0.00	0.00	1.00	0.09	0.00	0.00	0.00	0.00	0.00	1.00
35	0.63	0.65	0.54	0.61	0.74	0.97	0.02	0.02	0.02	0.06	0.01	0.86	0.00	0.00	0.00	0.00	0.00	0.15	0.14	0.14	0.16	0.11	0.93	0.93	0.00	0.00	0.00	0.00	1.00	0.16	0.00	0.00	0.00	0.00	0.00	0.98
46	0.59	0.71	0.59	0.33	0.79	0.96	0.02	0.02	0.01	0.00	0.01	1.00	0.00	0.00	0.00	0.00	0.00	0.22	0.19	0.15	0.24	0.39	1.00	0.97	0.00	0.00	0.00	0.00	1.00	0.13	0.00	0.00	0.00	0.00	0.00	0.99
49	0.71	0.87	0.65	0.55	0.96	0.99	0.05	0.01	0.02	0.01	0.01	0.94	0.00	0.00	0.00	0.00	0.00	0.13	0.09	0.13	0.18	0.26	0.97	0.97	0.00	0.00	0.00	0.00	1.00	0.07	0.00	0.00	0.00	0.00	0.00	0.99
59	0.59	0.57	0.46	0.92	0.95	0.97	0.01	0.02	0.05	0.02	0.05	0.52	0.00	0.00	0.00	0.00	0.00	0.02	0.12	0.15	0.14	0.07	0.99	1.00	0.00	0.00	0.00	0.01	0.98	0.24	0.00	0.00	0.00	0.00	0.00	0.79
66	0.95	0.94	0.93	0.83	1.00	0.98	0.07	0.04	0.08	0.01	0.41	0.97	0.00	0.00	0.00	0.00	0.00	0.20	0.31	0.32	0.15	0.48	1.00	0.94	0.00	0.00	0.00	0.03	0.81	0.06	0.00	0.00	0.00	0.00	0.32	0.99
78	1.00	1.00	0.99	1.00	0.73	1.00	0.75	0.95	0.99	0.92	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.63	0.56	0.67	0.68	0.96	0.04	0.01	0.15	0.04	1.00	0.28	0.00	0.00	0.00	0.00	0.00	0.10
84	0.99	1.00	0.71	1.00	0.52	1.00	0.88	1.00	0.95	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.01	0.34	0.72	0.90	0.88	0.48	0.78	0.01	0.04	0.54	0.15	1.00	0.91	0.00	0.00	0.00	0.00	0.00	0.27
91	0.77	0.98	1.00	0.95	1.00	1.00	0.04	0.08	0.15	0.12	0.17	1.00	0.00	0.00	0.00	0.00	0.00	0.39	0.24	0.13	0.15	0.19	0.99	1.00	0.00	0.00	0.00	0.01	0.99	0.17	0.00	0.00	0.00	0.00	0.00	1.00
102	0.55	0.70	0.50	0.77	0.35	0.66	0.01	0.02	0.02	0.00	0.00	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.11	0.17	0.22	0.70	1.00	0.00	0.00	0.00	0.00	0.56	0.94	0.00	0.00	0.00	0.00	0.00	1.00
108	0.79	0.81	0.60	0.77	0.33	0.60	0.01	0.01	0.02	0.01	0.00	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.09	0.13	0.27	0.28	1.00	0.00	0.00	0.00	0.00	0.74	0.90	0.00	0.00	0.00	0.00	0.00	0.99
115	0.60	0.64	0.56	0.55	0.67	0.84	0.00	0.01	0.01	0.01	0.00	0.66	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.17	0.17	0.13	0.38	1.00	0.00	0.00	0.00	0.01	0.88	0.79	0.00	0.00	0.00	0.00	0.00	1.00
123	0.61	0.63	0.59	0.50	0.49	0.51	0.00	0.01	0.01	0.00	0.00	0.47	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.21	0.13	0.20	0.25	1.00	0.00	0.00	0.00	0.00	0.75	0.96	0.00	0.00	0.00	0.00	0.00	0.08
135	0.90	0.82	0.79	0.83	0.88	0.56	0.01	0.01	0.01	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.08	0.02	0.05	0.07	0.13	0.93	1.00	0.00	0.00	0.00	0.04	1.00	0.66	0.00	0.00	0.00	0.00	0.00	0.99
193	0.79	0.87	0.82	0.90	0.98	0.84	0.02	0.01	0.01	0.08	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.01	0.26	0.22	0.24	0.19	0.77	1.00	0.07	0.01	0.01	0.03	0.96	0.91	0.00	0.00	0.00	0.00	0.00	0.90
310	1.00	0.95	0.99	1.00	1.00	1.00	0.95	0.99	0.98	1.00	0.95	0.86	0.88	0.00	0.00	0.00	0.00	0.00	0.99	0.37	0.41	0.36	0.32	0.35	0.98	0.95	0.89	0.97	0.94	0.97	0.99	0.00	0.00	0.00	0.00	0.00
400	0.14	0.62	0.84	0.90	1.00	0.77	0.82	0.93	0.94	0.54	0.74	0.87	0.00	0.00	0.00	0.00	0.00	0.00	0.39	0.21	0.20	0.99	0.69	0.69	0.04	0.01	0.01	0.02	0.06	0.97	0.00	0.00	0.00	0.00	0.00	0.00
465	0.98	0.93	0.87	0.95	1.00	0.98	0.87	0.99	1.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.81	0.73	0.65	0.73	0.82	0.22	0.11	0.08	0.89	0.49	0.98	0.00	0.00	0.00	0.00	0.00	0.00

Table S2: Table of significant differences of each treatment's ERT depth (column) relative to the control plot on the same time (row). The values indicate the p values and are coloured whereas dark green differs highly significantly (p<0.001), light green differs significantly (p<0.05) and yellow differs low significantly (p<0.2). The colors for orange (p<0.5) light red (p<0.9) and dark red (p>0.9) are used to highlight nonsignificant differences.

	Na							Nb							Nc							KCl							KClb							KCLc						
DAF	10	20	30	40	60	80	100	10	20	30	40	60	80	100	10	20	30	40	60	80	100	10	20	30	40	60	80	100	10	20	30	40	60	80	100	10	20	30	40	60	80	100
0	0.52	0.80	1.00	1.00	1.00	1.00	1.00	0.74	1.00	0.76	0.95	1.00	1.00	0.99	0.99	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	0.87	0.97	1.00	1.00	1.00	0.16	0.22	0.97	1.00	1.00	1.00	0.98	0.99	1.00	0.88	0.95	0.99	0.96	0.65
36	0.41	0.05	0.00	0.01	0.34	0.28	0.03	0.04	0.00	0.00	0.00	0.02	0.14	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.71	1.00	0.78	0.00	0.00	0.00	0.00	0.29	0.92	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00
66	1.00	0.96	0.80	1.00	1.00	1.00	1.00	0.28	0.03	0.01	0.17	0.90	1.00	0.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.01	0.00	0.23	1.00	1.00	1.00	0.06	0.00	0.00	0.08	0.92	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102	1.00	0.68	0.28	0.26	0.38	0.06	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.97	0.35	0.15	0.15	0.10	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
193	0.55	0.36	0.25	0.29	0.27	0.06	0.00	0.77	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
310	0.95	1.00	1.00	1.00	1.00	1.00	0.92	0.00	0.00	0.23	0.93	1.00	0.98	0.55	1.00	0.15	0.00	0.00	0.00	0.00	0.00	0.08	0.39	1.00	1.00	1.00	0.88	0.64	0.08	0.63	1.00	1.00	0.87	0.57	0.65	0.84	0.82	0.02	0.00	0.00	0.00	0.00
400	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.09	0.38	0.87	0.98	1.00	1.00	0.96	0.20	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.91	0.75	1.00	0.99	0.82	0.82	0.80	0.73	0.84	0.58	0.00	0.00	0.00	0.00	0.00	0.00
465	1.00	0.64	0.52	0.80	0.99	0.98	0.75	0.71	0.58	0.69	0.90	0.96	1.00	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.99	0.94	0.87	0.96	0.99	0.91	0.57	0.97	0.55	0.27	0.30	0.52	0.73	0.84	0.01	0.00	0.00	0.00	0.00	0.00	0.00

Table S3: Table of significant differences of each treatment's ECe^{Soil} per depth(column) relative to the control plot on the same time (row). The values indicate the *p* values and are coloured whereas dark green differs highly significantly ($p<0.001$), light green differs significantly ($p<0.05$) and yellow differs low significantly ($p<0.2$). The colors for orange ($p<0.5$) light red ($p<0.9$) and dark red ($p>0.9$) are used to highlight nonsignificant differences.

	Na							Nb							Nc							KCla							KClb							KClc						
DAF	10	20	30	40	60	80	100	10	20	30	40	60	80	100	10	20	30	40	60	80	100	10	20	30	40	60	80	100	10	20	30	40	60	80	100	10	20	30	40	60	80	100
0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
36	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.50	0.20	0.60	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.30	0.60	0.90	1.00	1.00	1.00	1.00	0.00	0.10	0.60	1.00	1.00	1.00	1.00
66	0.70	1.00	1.00	1.00	1.00	1.00	1.00	0.20	0.50	1.00	1.00	1.00	1.00	1.00	0.20	0.10	0.30	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.70	1.00	1.00	1.00	0.50	0.90	0.70	0.60	1.00	1.00	1.00	0.30	0.60	0.40	0.30	1.00	1.00	1.00
102	1.00	0.70	1.00	0.90	1.00	0.90	1.00	0.80	1.00	1.00	0.60	0.60	1.00	1.00	0.00	0.00	0.10	0.00	0.10	0.30	1.00	0.70	0.50	0.80	0.80	1.00	1.00	0.40	0.20	0.70	0.80	0.70	1.00	1.00	0.70	0.50	0.00	0.10	0.00	0.00	0.10	0.00
135	1.00	0.90	1.00	1.00	0.80	1.00	1.00	0.80	0.70	0.70	0.80	0.90	1.00	1.00	0.10	0.00	0.00	0.20	0.00	0.00	0.80	1.00	0.90	1.00	1.00	1.00	0.70	0.70	0.40	0.50	0.80	1.00	1.00	0.80	1.00	0.40	0.00	0.10	0.30	0.20	0.40	0.40
193	1.00	1.00	1.00	1.00	1.00	0.80	1.00	0.10	0.40	0.60	0.80	0.80	0.90	1.00	0.00	0.00	0.10	0.10	0.10	0.10	0.70	0.90	0.90	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.90	0.90	1.00	1.00	1.00	0.10	0.10	0.20	0.10	0.30	0.20	0.70
310	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50	0.50	0.90	0.30	0.10	0.50	0.20	0.00	0.10	0.20	0.10	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.70	0.90	0.40	0.30	0.90	0.50	0.40	0.20	0.10	0.00	0.00	0.00	0.00
400	0.80	0.90	0.20	1.00	0.90	1.00	1.00	0.70	0.30	0.80	1.00	0.70	0.40	0.90	0.10	0.00	0.10	0.10	0.00	0.00	0.20	0.10	0.60	0.90	1.00	0.90	0.70	0.90	0.90	0.80	0.60	0.90	0.50	0.70	0.90	0.40	0.10	0.00	0.10	0.00	0.00	0.10
465	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.60	0.80	0.10	0.20	0.30	0.30	0.00	0.00	0.00	1.00	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.60	0.70	0.40	0.20	0.70	0.80	0.80	0.10	0.20	0.10

Table S4: Table of significant differences of each treatment's Nitrate content per depth (column) relative to the control plot on the same time (row). The values indicate the *p* values and are coloured whereas dark green differs highly significantly ($p<0.001$), light green differs significantly ($p<0.05$) and yellow differs low significantly ($p<0.2$). The colors for orange ($p<0.5$) light red ($p<0.9$) and dark red ($p>0.9$) are used to highlight nonsignificant differences.

	Na							Nb							Nc						
DAF	10	20	30	40	60	80	100	10	20	30	40	60	80	100	10	20	30	40	60	80	100
0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
36	0.45	0.68	0.99	0.27	1.00	1.00	1.00	0.14	0.27	0.65	0.88	1.00	1.00	1.00	0.06	0.02	0.14	0.77	1.00	1.00	1.00
66	0.67	0.60	0.60	0.74	1.00	1.00	1.00	0.22	0.67	0.86	0.39	1.00	1.00	1.00	0.01	0.02	0.03	0.05	1.00	1.00	1.00
102	0.53	0.53	0.45	0.86	0.74	0.86	0.93	0.22	0.32	0.39	0.39	0.32	0.60	0.84	0.22	0.01	0.01	0.02	0.02	0.03	0.45
135	1.00	0.97	0.99	0.75	0.94	0.99	0.89	0.22	0.39	0.32	0.31	0.45	0.67	0.16	0.14	0.03	0.03	0.02	0.03	0.09	0.09
193	0.99	0.86	0.68	0.86	0.94	0.86	1.00	0.17	0.22	0.27	0.22	0.27	0.22	0.60	0.08	0.02	0.02	0.02	0.02	0.02	0.06
310	0.94	0.94	0.90	0.98	0.82	0.93	0.86	0.67	0.97	0.24	0.65	0.79	0.72	0.80	0.05	0.08	0.02	0.12	0.20	0.16	0.22
400	0.94	0.97	0.85	0.98	0.94	0.74	0.99	0.97	0.88	1.00	1.00	0.60	0.90	0.45	0.32	0.07	0.43	0.25	0.27	0.22	0.19
465	0.53	1.00	0.99	0.84	1.00	1.00	0.99	0.82	0.97	0.87	0.84	0.45	0.63	0.53	0.06	0.22	0.09	0.27	0.06	0.08	0.07