Supplementary Information

Regulation of N_2O emissions from acid organic soil drained for agriculture: Effects of land use and season

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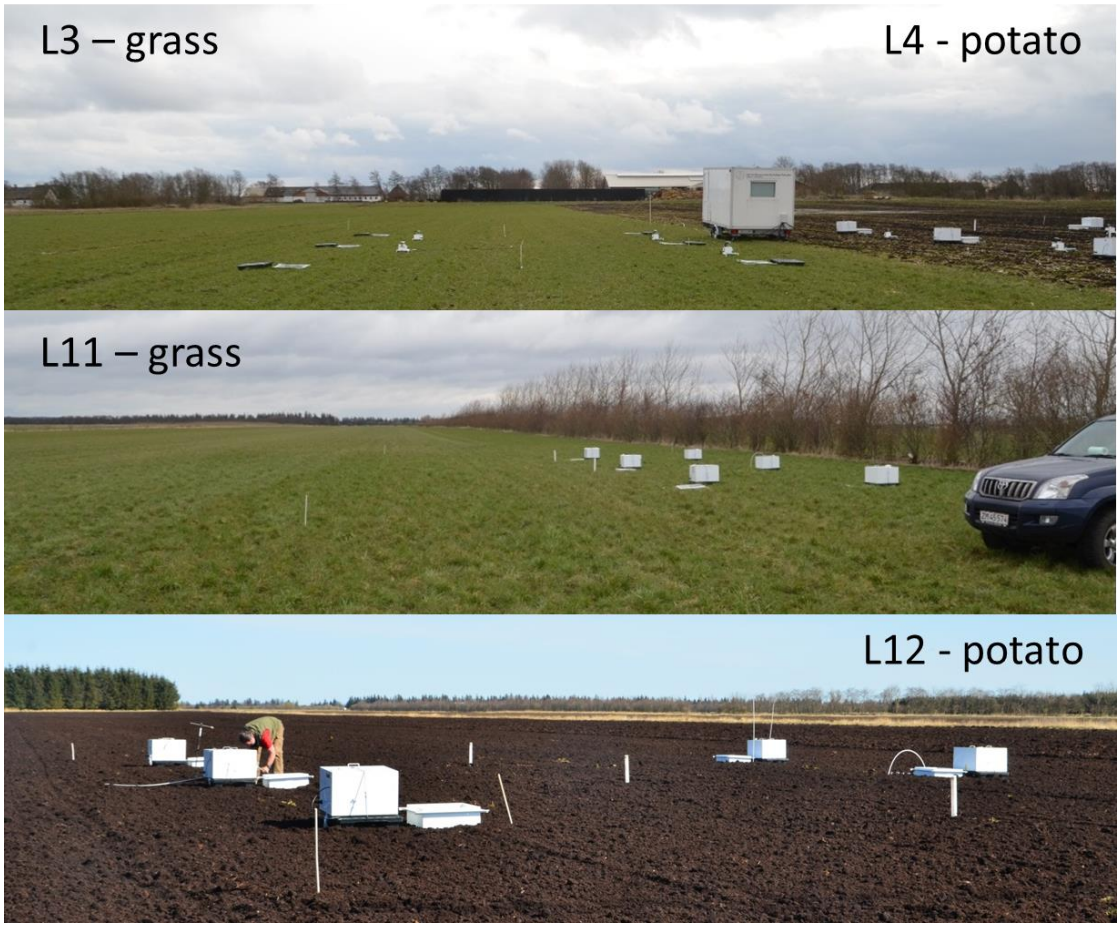

Figure S1. Impressions from the four field site in Store Vildmose; *RG1* (grass) and *AR1* (potato) were in neighbouring fields.

Soil gas diffusion probes – design and application

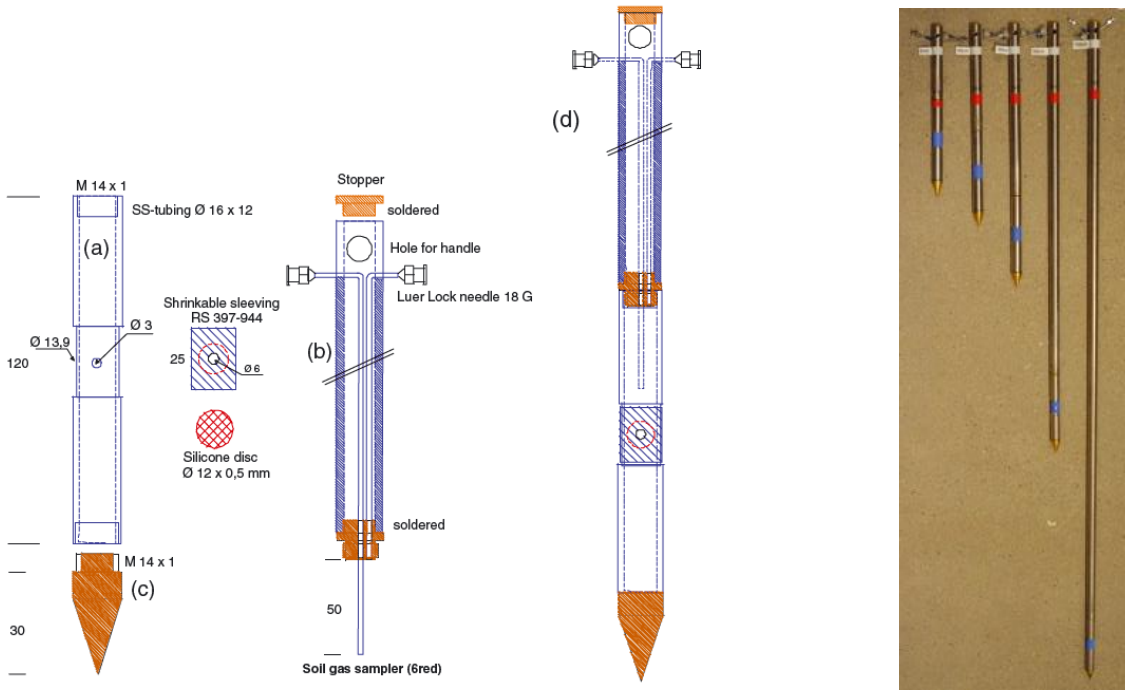

Figure S2. A schematic illustration of the diffusion probe. (a) Open-ended diffusion cell with 3-mm diameter central opening and a 30-mm long section with reduced diameter. A silicone membrane over the opening is held in place by heat-shrinkable sleeving. (b) Hollow shaft with thread connecting the diffusion cell to the soil surface. It is equipped with two custom-made syringes with a 90° bend near the top, one of which extends to near the centre of the diffusion cell. Also near the top is an opening for a crossbar. (c) Conical plug of hardened PVC with thread. (d) The assembled probe; shaft length is varied depending on sampling depth. [Reproduced from: S.O. Petersen (2014) Diffusion probe for gas sampling in undisturbed soil. European Journal of Soil Science 65, 663-671]

The application of the diffusion probes for gas sampling involves installation and sampling. An auger may be used to facilitate soil penetration above the sampling depth, in order to protect the silicone membrane during probe installation. Photo (a) below shows the positioning of probes relative to flux measurements in the present study.

Equilibration time prior to gas sampling will depend on the gas in question; based on the considerations of Petersen (2014; Eur. J. Soil Sci. 65, 663-671) equilibration of N_2O in saturated soil within one week was assumed.

Gas sampling procedure may be summarised as:

1. Flush with 10 mL N_2 spiked with ethylene into glass syringe, see photo (b)
2. Transfer from glass syringe to pressurise 6-mL exetainer, see photo (c)
3. After gas sampling, flush probe with 2 x 60 mL N_2
4. Analyse GHG and ethylene by GC, correct for dilution

(a)

(b)

(c)

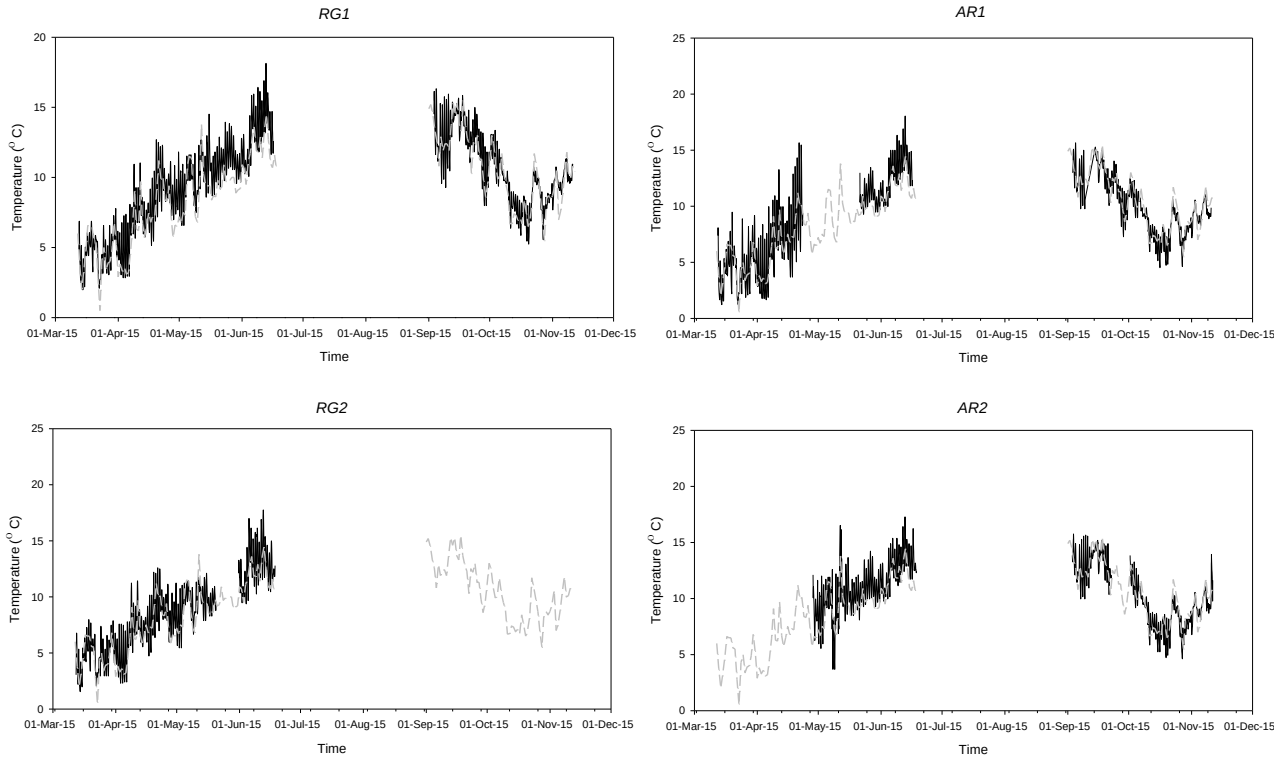

Figure S3. Hourly soil temperature at 10 cm depth during the spring and autumn periods (solid black lines), and daily air temperature from the closest weather station (dashed grey line).

Table S1. Mineral N (μg g^{-1} dry wt. soil) at 0-25 and 25-50 cm depth at *RG1* with rotational grass. Fertilisation (350 kg N ha^{-1} in NS 24-7) occurred on 16 April. The numbers shown are mean and standard error (n = 3).

		Unfertilised				Fertilised			
		0-25 cm		25-50 cm		0-25 cm		25-50 cm	
Date	DOY	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N
3/4/2015	63	9.03 (1.00)	8.80 (1.73)	11.34 (1.68)	4.15 (0.55)	5.41 (0.70)	7.05 (0.72)	13.79 (0.04)	5.10 (1.32)
3/17/2015	76	10.9 (0.85)	11.77 (1.19)	9.68 (0.50)	7.17 (2.17)	1.36 (0.15)	8.77(0.69)	5.05 (0.69)	7.67 (0.19)
3/24/2015	83	7.13 (0.20)	4.80 (0.33)	11.60 (0.88)	5.52 (0.87)	3.73 (0.52)	4.05 (0.52)	11.07 (0.34)	6.07 (0.63)
4/9/2015	99	0.13 (0.00)	3.07 (0.07)	1.51 (0.27)	2.85 (0.36)	0.12 (0.00)	4.33 (0.43)	2.38 (0.10)	3.72 (0.10)
4/14/2015	104	4.09 (0.37)	3.84 (0.00)	7.11 (0.65)	2.83 (0.08)	3.84 (0.48)	3.18 (0.30)	14.98 (0.47)	2.17 (0.47)
4/22/2015	112	0.70 (0.19)	25.94 (0.57)	6.44 (1.18)	2.91 (0.14)	133.2 (11.9)	120.0 (5.17)	81.91 (3.81)	72.9 (6.18)
4/29/2015	119	4.26 (0.14)	2.21 (0.07)	4.52 (0.07)	2.11 (0.13)	21.06 (1.43)	17.2 (0.66)	39.64 (7.41)	34.20 (8.11)
5/6/2015	126	5.54 (0.56)	1.40 (0.19)	8.38 (1.09)	0.15 (0.15)	7.81 (1.49)	2.55 (0.44)	15.15 (0.27)	1.29 (0.08)
5/13/2015	133	0.00 (0.00)	3.37 (0.25)	0.00 (0.00)	1.91 (0.28)	0.57 (0.57)	4.75 (0.37)	4.36 (2.03)	3.43 (0.08)
5/20/2015	140	5.03 (0.31)	1.39 (0.25)	5.09 (0.39)	0.44 (0.26)	3.23 (0.49)	2.49 (0.36)	10.33 (0.47)	1.18 (0.16)
5/27/2015	147	3.98 (0.11)	1.99 (0.29)	4.78 (0.35)	1.00 (0.07)	4.97 (0.12)	3.36 (0.12)	9.72 (0.75)	1.55 (0.25)
6/4/2015	155	4.23 (0.06)	1.63 (0.18)	5.30 (0.08)	1.16 (0.22)	4.05 (0.30)	2.43 (0.00)	8.97 (0.09)	1.65 (0.00)
6/11/2015	162	3.64 (0.17)	1.90 (0.17)	6.10 (1.34)	1.03 (0.07)	4.22 (0.06)	3.69 (0.06)	10.31 (0.10)	1.75 (0.00)
6/16/2015	167	1.72 (0.28)	4.12 (0.01)	5.10 (0.42)	2.66 (0.07)	5.93 (0.11)	9.51 (0.45)	8.63 (0.75)	5.16 (0.17)
9/3/2015	246	5.72 (0.20)	2.12 (0.24)	9.14 (0.52)	2.50 (0.67)	6.72 (0.24)	4.04 (0.10)	6.32 (0.16)	0.95 (0.00)
9/9/2015	252	9.15 (0.65)	2.44 (0.52)	11.58 (0.24)	1.20 (0.00)	10.48 (0.18)	3.52 (0.51)	15.23 (0.00)	1.79 (0.09)
9/16/2015	259	7.11 (0.31)	2.51 (0.08)	9.57 (0.00)	2.69 (0.00)	6.52 (0..04)	6.23 (0.18)	14.08 (0.05)	7.92 (4.77)
9/23/2015	266	7.06 (0.31	4.45 (0.91)	6.99 (0.13)	2.46 (0.44)	9.07 (0.22)	7.55 (3.06)	14.39 (0.56)	2.20 (0.30)
9/29/2015	272	5.40 (0.10)	1.74 (0.14)	10.38 (0.00)	3.92 (1.71)	6.02 (0.16)	5.18 (0.02)	11.69 (0.42)	4.50 (0.25)
10/7/2015	280	37.4 (19.0)	4.06 (2.02)	18.97 (2.97)	1.55 (0.08)	8.52 (0.87)	7.58 (4.20)	13.21 (0.04)	2.63 (0.10)
10/21/2015	294	8.25 (0.20)	2.42 (0.07)	8.94 (0.17)	1.50 (0.00)	11.43 (0.14)	5.34 (0.07)	16.15 (1.00)	4.34 (0.00)
10/28/2015	301	38.2 (2.01)	2.43 (0.13)	53.24 (0.06)	1.07 (0.08)	14.64 (3.66)	6.10 (0.04)	16.44 (0.95)	3.83 (0.05)
11/4/2015	308	8.15 (0.28)	2.66 (0.07)	5.34 (0.67)	1.17 (0.17)	8.89 (0.03)	3.98(0.29)	14.50 (0.79)	2.94 (0.20)
11/10/2015	314	8.99 (0.08)	3.77 (0.12)	10.32 (0.07)	1.91 (0.08)	10.32 (0.16)	11.30 (0.08)	10.77 (1.94)	6.35 (0.35)

Table S2. Mineral N (μg g^{-1} dry wt. soil) at 0-25 and 25-50 cm depth at site *AR1* with potato. Fertilisation (100 kg N ha^{-1} in NPS 20-3-3) took place on 21 May. The numbers shown are mean and standard error (n = 3).

Date		Unfertilised				Fertilised			
		0-25 cm		25-50 cm		0-25 cm		25-50 cm	
Date (m/d/y)	DOY	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N
3/4/2015	63	2.14 (0.30)	15.36 (1.62)	14.07 (4.53)	22.08 (2.60)	1.53 (0.51)	18.27 (1.34)	4.69 (0.63)	14.48 (0.72)
3/17/2015	76	1.29 (0.44)	26.53 (0.61)	1.77 (0.11)	25.37 (2.03)	0.83 (0.24)	25.12 (0.96)	0.92 (0.25)	19.38 (1.30)
3/24/2015	83	0.99 (0.07)	22.63 (0.21)	3.61 (0.98)	24.11 (1.51)	1.19 (0.13)	17.06 (0.25)	4.21 (0.07)	19.46 (2.67)
4/9/2015	99	0.00 (0.00)	21.92 (0.39)	0.92 (0.06)	32.70 (1.30)	0.00 (0.00)	36.27 (0.06)	1.23 (0.15)	15.67 (0.55)
4/14/2015	104	2.25 (0.40)	28.37 (1.28)	3.09 (0.33)	24.62 (0.72)	2.85 (0.35)	30.98 (0.78)	5.93 (0.89)	26.96 (1.06)
4/22/2015	112	1.20 (0.19)	26.86 (2.00)	5.21 (0.08)	42.56 (1.34)	5.86 (0.05)	4.35 (0.27)	3.32 (0.51)	17.84 (0.71)
5/13/2015	133	178.99 (4.75)	117.2 (3.4)	105.9 (61.9)	85.87 (13.99)	72.73 (5.20)	91.87 (1.31)	39.29 (3.40)	64.94 (0.60)
5/20/2015	140	26.45 (2.90)	77.07 (8.48)	13.55 (0.07)	50.36 (0.07)	56.87 (12.09)	64.33(0.62)	13.74 (0.16)	18.86 (0.66)
5/27/2015	147	10.42 (0.57)	125.9 (7.3)	3.56 (0.19)	36.87 (1.41)	384.4 (67.0)	193.0 (16.0)	141.51(27.8)	54.03 (7.93)
6/4/2015	155	3.17 (0.23)	85.39 (10.87)	2.48 (0.33)	47.25 (5.24)	222.57 (0.79)	191.5 (0.3)	58.11 (1.21)	23.84 (2.57)
6/11/2015	162	2.53 (1.09)	93.66 (3.65)	4.13 (0.28)	73.75 (0.84)	121.1 (66.0)	172.6 (77.6)	80.16(39.48)	123.7 (50.6)
6/16/2015	167	1.32 (0.07)	102.5 (0.8)	0.71 (0.06)	59.94 (1.64)	70.80 (4.96)	298.13 (3.21)	30.73 (1.72)	71.88 (5.08)
9/3/2015	246	9.61 (0.02)	91.16 (3.80)	10.59 (1.10)	40.01 (0.24)	18.04 (0.91)	147.47 (0.66)	8.95 (0.18)	42.70 (2.02)
9/9/2015	252	6.77 (0.14)	58.66 (0.07)	11.85 (0.91)	32.46 (2.86)	14.34 (0.31)	118.22 (2.45)	14.83 (0.39)	80.70 (3.08)
9/16/2015	259	8.05 (0.19)	57.17 (1.63)	7.06 (0.41)	35.79 (0.55)	4.26 (0.06)	68.85 (2.76)	7.86 (0.27)	33.85 (2.09)
9/23/2015	266	22.26 (0.22)	21.72 (0.01)	13.49 (1.23)	15.82 (1.08)	4.30 (0.22)	34.62 (1.04)	8.78 (0.33)	16.85 (0.03)
9/29/2015	272	17.43 (0.33)	14.71 (1.40)	11.41 (0.50)	7.65 (0.15)	13.65 (0.23)	15.12 (0.37)	6.30 (0.03)	6.87 (1.19)
10/7/2015	280	38.54 (1.08)	13.38 (0.60)	27.78 (1.38)	22.13 (0.84)	13.81 (0.28)	23.81 (0.51)	5.95 (1.00)	16.17 (0.35)
10/21/2015	294	26.35 (0.50)	19.95 (0.51)	19.27 (0.01)	18.68 (0.58)	19.38 (0.86)	15.77 (0.05)	9.51 (0.05)	8.68 (0.38)
10/28/2015	301	25.63 (3.12)	17.76 (0.10)	15.22 (0.30)	16.44 (3.33)	236.35 (5.46)	1.68 (0.27)	28.59 (5.41)	4.54 (0.07)
11/4/2015	308	23.07 (0.74)	23.03 (0.68)	15.23 (0.25)	32.70 (2.30)	13.77 (0.10)	14.34 (0.38)	10.61 (0.03)	11.60 (1.74)
11/10/2015	314	16.20 (2.60)	21.73 (0.73)	16.59 (0.38)	23.77 (0.27)	22.58 (2.08)	23.24 (0.37)	12.85 (2.10)	11.74 (0.43)

Table S3. Mineral N (μg g^{-1} dry wt. soil) at 0-25 and 25-50 cm depth at site *RG2* with rotational grass. Fertilisation with acidified slurry (90-110 kg N ha^{-1} in acidified slurry) occurred on 5 May, and again on 2 July. The numbers shown are mean and standard error (n = 3).

		Unfertilised				Fertilised			
		0-25 cm		25-50 cm		0-25 cm		25-50 cm	
Date	DOY	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N
3/5/2015	64	6.28 (0.16)	4.41 (0.13)	4.93 (0.18)	1.76 (0.05)	15.46 (0.95)	3.65 (0.30)	9.99 (0.34)	3.76 (2.77)
3/18/2015	77	2.66 (0.19)	7.08 (2.59)	1.53 (0.03)	1.38 (0.15)	14.78 (0.79)	4.64 (0.12)	10.42 (0.31)	3.90 (2.56)
3/25/2015	84	4.18 (0.26)	4.81 (0.15)	3.27 (0.28)	2.00 (0.38)	7.71 (0.17)	10.80 (1.68)	5.73 (0.72)	3.30 (0.38)
4/8/2015	98	0.24 (0.24)	22.69 (0.70)	2.56 (0.00)	7.33 (0.85)	NA	NA	NA	NA
4/16/2015	106	2.81 (0.08)	3.99 (0.04)	3.29 (0.61)	1.45 (0.10)	NA	NA	NA	NA
4/21/2015	111	0.98 (0.08)	6.86 (0.16)	1.76 (0.34)	1.76 (0.06)	NA	NA	NA	NA
4/28/2015	118	2.55 (0.11)	7.43 (0.19)	8.45 (0.34)	5.00 (0.08)	NA	NA	NA	NA
5/5/2015	125	3.79 (0.88)	4.83 (0.42)	3.74 (0.28)	1.96 (0.00)	NA	NA	NA	NA
5/12/2015	132	2.76 (0.00)	5.47 (0.96)	0.74 (0.74)	3.76 (0.78)	4.55 (0.00)	16.66 (1.09)	14.02 (0.15)	9.40 (0.88)
5/19/2015	139	1.22 (0.24)	3.96 (1.31)	3.38 (0.55)	2.49 (0.10)	5.29 (1.13)	8.27 (0.49)	9.45 (0.50)	2.49 (0.21)
6/3/2015	154	5.86 (0.73)	12.99 (0.52)	50.5 (35.47)	5.73 (0.85)	22.54 (1.72)	34.52 (3.69)	16.34 (2.03)	16.46 (0.71)
6/10/2015	161	1.57 (0.24)	8.96 (0.61)	2.61 (0.09)	2.37 (0.03)	14.30 (1.56)	43.18 (0.62)	11.42 (1.25)	7.23 (0.20)
6/18/2015	169	3.11 (0.31)	3.51 (0.08)	1.93 (0.00)	0.83 (0.07)	12.35 (0.27)	46.95 (2.82)	9.01 (0.31)	10.37 (0.49)
9/17/2015	260	4.27 (0.16)	8.42 (0.51)	5.48 (0.21)	3.11 (0.59)	13.67 (1.13)	2.54 (1.16)	9.23 (0.28)	3.57 (0.51)
9/22/2015	265	1.76 (0.06)	17.13 (0.01)	5.65 (0.01)	7.21 (0.10)	4.65 (0.20)	16.38 (0.25)	5.61 (0.35)	7.05 (0.72)
9/29/2015	272	6.76 (0.30)	9.52 (0.14)	5.10 (0.05)	4.24 (0.09)	7.64 (0.41)	9.63 (0.32)	10.83 (0.33)	8.08 (0.07)
10/6/2015	279	1.75 (0.08)	10.41 (0.08)	3.75 (0.24)	4.91 (0.24)	6.75 (1.31)	11.96 (0.13)	10.25 (1.12)	5.48 (1.90)
10/20/2015	293	1.99 (0.04)	9.70 (0.13)	4.40 (0.21)	5.16 (1.31)	9.95 (0.09)	10.02 (1.44)	8.75 (0.44)	3.82 (0.91)
10/27/2015	300	2.23 (0.46)	13.75 (1.10)	5.67 (0.48)	4.39 (0.13)	4.48 (0.93)	13.05 (0.04)	8.51 (0.34)	4.18 (0.41)
11/3/2015	307	2.57 (0.64)	9.57 (0.37)	4.66 (0.18)	3.52 (0.58)	7.87 (1.00)	10.31 (0.84)	8.63 (0.28)	3.20 (0.11)

NA, not available.

Table S4. Mineral N (μg g^{-1} dry wt. soil) at 0-25 and 25-50 cm depth at site *AR2* with potato. Fertilisation took place on 30 April, where the soil received fertilizer (110 kg N ha^{-1} in NS 21-24). The numbers shown are mean and standard error (n = 3).

		Unfertilised				Fertilised			
		0-25 cm		25-50 cm		0-25 cm		25-50 cm	
Date	DOY	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N	NH_4^+-N	NO_3^--N
3/5/2015	64	8.66 (0.26)	5.19 (0.55)	17.23 (0.71)	3.55 (0.12)	5.70 (0.19)	13.46 (0.44)	13.03 (0.07)	5.67 (0.52)
3/18/2015	77	8.06 (0.65)	10.71 (0.17)	20.19 (0.39)	9.80 (2.93)	2.89 (0.26)	14.79 (3.69)	6.82 (0.10)	6.07 (0.46)
3/25/2015	84	14.90 (0.96)	13.15 (3.24)	22.69 (1.08)	3.94 (0.79)	8.61 (0.61)	14.69 (0.52)	17.02 (1.15)	15.98 (0.34)
4/8/2015	98	2.04 (0.53)	10.96 (0.07)	0.00 (0.00)	1.23 (0.14)	1.66 (0.04)	6.18 (0.12)	8.66 (0.98)	8.12 (0.09)
4/16/2015	106	4.42 (0.14)	26.44 (1.33)	8.63 (0.97)	13.14 (0.08)	2.18 (0.22)	11.14 (0.22)	7.01 (0.55)	7.19 (0.27)
4/21/2015	111	2.80 (0.07)	34.72 (0.06)	NA	NA	0.33 (0.07)	23.35 (0.61)	6.37 (0.17)	16.45 (0.94)
4/28/2015	118	5.81 (0.60)	49.94 (0.66)	3.51 (0.30)	11.17 (0.33)	0.77 (0.00)	27.89 (0.36)	5.14 (0.09)	22.23 (0.10)
5/5/2015	125	7.72 (0.43)	44.80 (0.80)	15.67 (6.32)	34.73 (11.46)	181.8 (11.0)	22.20 (14.26)	22.19 (6.32)	23.55 (12.50)
5/12/2015	132	12.21 (6.42)	56.62 (0.50)	2.01 (0.52)	34.74 (0.27)	68.63 (13.65)	85.45 (0.13)	39.12 (27.30)	37.51 (0.38)
5/19/2015	139	8.24 (0.09)	44.97 (0.07)	6.77 (0.30)	28.66 (0.06)	15.93 (0.09)	103.2 (2.7)	12.81 (0.96)	32.21 (8.62)
5/26/2015	146	5.38 (0.01)	62.38 (3.74)	4.65 (0.42)	18.68 (1.02)	3.63 (0.07)	80.06 (4.96)	2.08 (0.30)	8.00 (0.19)
6/3/2015	154	5.61 (0.49)	36.58 (1.76)	5.57 (0.63)	20.56 (0.41)	1.86 (0.24)	64.15 (5.06)	3.24 (0.09)	26.73 (3.61)
6/10/2015	161	6.41 (0.34)	59.50 (1.88)	8.44 (0.47)	42.40 (1.99)	1.02 (0.15)	108.4 (0.5)	3.90 (1.02)	37.96 (1.75)
6/18/2015	169	4.49 (0.00)	64.76 (0.92)	9.07 (0.38)	37.85 (0.21)	2.05 (0.25)	62.36 (0.39)	2.35 (0.21)	21.46 (1.06)
9/2/2015	245	4.30 (0.29)	5.29 (0.35)	6.85 (0.83)	2.81 (0.21)	7.46 (0.33)	9.02 (0.32)	7.34 (1.23)	5.05 (0.07)
9/8/2015	251	6.71 (0.58)	4.64 (0.20)	5.36 (0.17)	2.38 (0.35)	9.76 (0.64)	10.48 (0.95)	5.04 (0.10)	2.91 (0.19)
9/17/2015	260	14.95 (0.09)	3.67 (0.35)	18.37 (2.43)	4.00 (0.11)	10.52 (0.84)	4.17 (0.21)	7.26 (0.46)	3.49 (0.77)
9/22/2015	265	9.81 (0.21)	9.95 (2.96)	6.57 (0.29)	3.16 (0.24)	8.37 (0.75)	11.28 (0.38)	8.93 (1.05)	6.01 (0.43)
10/6/2015	279	18.23 (0.62)	15.44 (0.18)	12.64 (0.08)	26.96 (2.29)	16.37 (0.13)	22.31 (0.02)	12.98 (0.02)	14.60 (0.07)
10/20/2015	293	22.31 (0.35)	16.82 (0.42)	21.03 (1.12)	10.58 (1.34)	20.57 (1.17)	18.69 (0.09)	12.44 (0.46)	18.11 (1.05)
10/27/2015	300	26.08 (1.49)	14.83 (1.36)	11.62 (0.31)	8.01 (0.05)	17.63 (1.80)	18.57 (0.43)	10.66 (1.20)	10.38 (1.49)
11/3/2015	307	25.34 (1.24)	12.27 (0.59)	18.66 (0.83)	10.62 (0.01)	19.61 (2.31)	16.92 (0.12)	9.89 (1.44)	15.10 (0.18)
11/10/2015	314	21.11 (0.38)	8.14 (0.12)	18.61 (2.80)	4.26 (0.20)	13.42 (1.88)	10.52 (0.41)	17.17 (3.84)	6.73 (0.03)

NA – Not available.

Table S5. Measured soil profile N_2O concentrations at the four field sites, *RG1*, *RG2*,*AR1* and *AR2*, during spring (this page) and autumn (next page). The two upper rows in each panel show sampling dates and DOY. Sampling positions are S3, S4, S5 and S6 as indicated in Figure 1b of the manuscript. Green shading indicated fertilised (dark green) and unfertilised subplots (light green), and numbers represent equivalent gas phase concentrations. Linearity of the GC response was verified up to 1600 ppm, but concentrations were occasionally even higher.

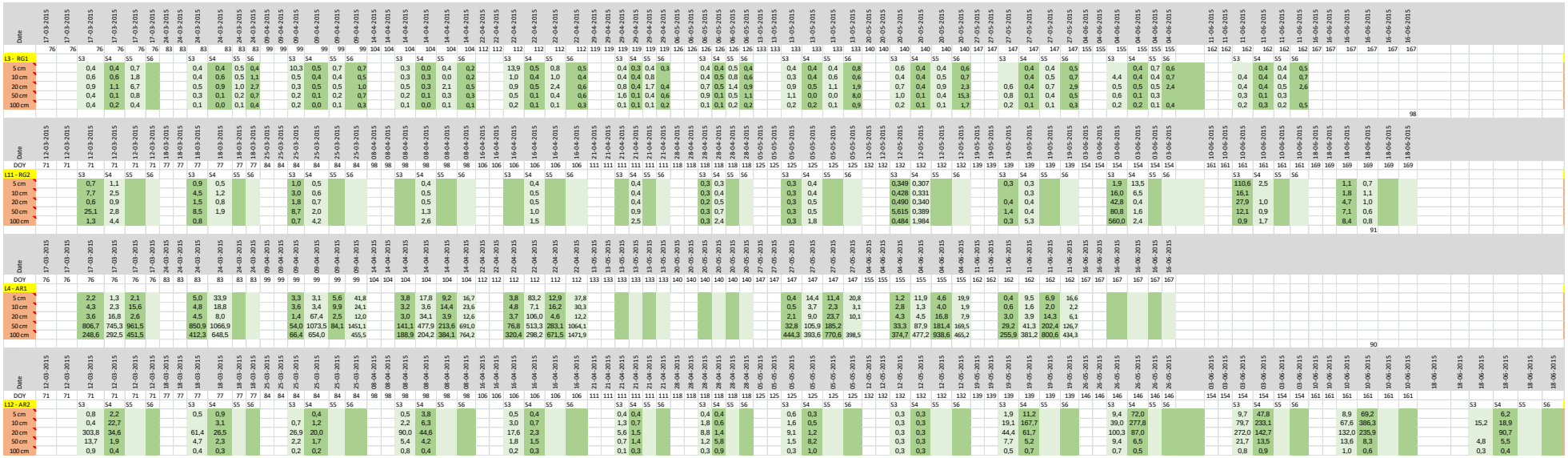

Table S5 (continued).

Date	03-09-2015	03-09-2015	03-09-2015	03-09-2015	03-09-2015	03-09-2015		09-09-2015	09-09-2015	09-09-2015	09-09-2015	09-09-2015	09-09-2015	16-09-2015	16-09-2015	16-09-2015	16-09-2015	16-09-2015	16-09-2015	23-09-2015	23-09-2015	23-09-2015	23-09-2015	23-09-2015	23-09-2015	29-09-2015	29-09-2015	29-09-2015	29-09-2015	29-09-2015	29-09-2015	07-10-2015	07-10-2015	07-10-2015	07-10-2015	07-10-2015	07-10-2015	21-10-2015	21-10-2015	21-10-2015	21-10-2015	21-10-2015	21-10-2015	28-10-2015	28-10-2015	28-10-2015	28-10-2015	28-10-2015	28-10-2015	04-11-2015	04-11-2015	04-11-2015	04-11-2015	04-11-2015	04-11-2015
	246	246	246	246	246	246		252	252	252	252	252	252	259	259	259	259	259	259	266	266	266	266	266	266	272	272	272	272	272	272	280	280	280	280	280	280	294	294	294	294	294	294	301	301	301	301	301	301	308	308	308	308	308	308
L3 - RG1		S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6		
5 cm		0,6	3,1	0,9	1,8			2,0	1,3	0,0	1,2			0,7	0,5	0,6	0,7			2,1	0,5	0,4	0,7			0,4	0,6	0,4	0,7			0,3	0,4	0,4	0,4			0,5	0,4	0,4	0,4			4,9	0,4	0,5	0,5			0,4	0,4	0,3	0,4		
10 cm		1,4	12,1	2,5	2,9			2,0	2,5	1,7	1,8			1,8	0,0	1,0	1,1			1,4	0,7	1,2	0,7			1,5	0,6	1,7	0,7			1,3	0,4	1,1	0,4			5,0	0,4	0,9	0,4			3,1	0,4	0,8	0,4			2,5	0,4	0,7	0,4		
20 cm		2,7	7,8	3,7	3,4			1,0	6,9	1,6	1,0			0,5	1,8	2,0	0,8			0,3	1,5	1,0	0,5			0,6	0,7	1,9	0,4			2,5	0,3	2,1	0,4			2,5	0,4	1,0	0,4			1,5	0,4	0,7	0,3			1,2	0,4	0,7	0,4		
50 cm		1,1	3,4	2,2	1,9			0,5	1,1	1,4	1,7			0,4	0,4	0,5	1,0			0,4	0,4	0,3	0,9			0,4	0,4	0,4	0,7			0,5	0,3	0,9	0,6			0,6	0,3	0,9	0,9			0,5	0,2	0,8	0,3			0,5	0,2	0,8	0,7		
100 cm		2,7	0,5	0,3	1,2			0,4	0,3	0,4				0,2	0,3	0,1	0,5			0,3	0,3	0,3	0,6			0,2	0,4	0,2	0,4			0,3	0,4	0,2	0,2			0,3	0,4	0,3	0,3			0,3	0,3	0,2	0,2			0,3	0,3	0,3	0,2		

Date	17-09-2015	17-09-2015	17-09-2015	17-09-2015	17-09-2015	17-09-2015	22-09-2015	22-09-2015	22-09-2015	22-09-2015	22-09-2015	22-09-2015	29-09-2015	29-09-2015	29-09-2015	29-09-2015	29-09-2015	29-09-2015	06-10-2015	06-10-2015	06-10-2015	06-10-2015	06-10-2015	06-10-2015	20-10-2015	20-10-2015	20-10-2015	20-10-2015	20-10-2015	20-10-2015	27-10-2015	27-10-2015	27-10-2015	27-10-2015	27-10-2015	27-10-2015	03-11-2015	03-11-2015	03-11-2015	03-11-2015	03-11-2015	03-11-2015
DOY	260	260	260	260	260	260	1	265	265	265	265	265	265	272	272	272	272	272	272	279	279	279	279	279	279	293	293	293	293	293	300	300	300	300	300	300	307	307	307	307	307	307
L11 - RG2			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6		
5 cm			3,0						1,7						2,1						3,5						0,7						0,5						0,5													
10 cm			12,1						2,1						3,0						3,0						2,0						2,5						1,9													
20 cm			7,6						1,4						1,9						2,3						3,4						4,2						4,2													
50 cm			3,6						0,4						0,4						0,5						0,7						0,5						0,6													
100 cm			0,6						0,2						0,3						0,2						0,3						0,3						0,3													

Date	03-09-2015	03-09-2015	03-09-2015	03-09-2015	03-09-2015	03-09-2015	09-09-2015	09-09-2015	09-09-2015	09-09-2015	09-09-2015	09-09-2015	16-09-2015	16-09-2015	16-09-2015	16-09-2015	16-09-2015	16-09-2015	23-09-2015	23-09-2015	23-09-2015	23-09-2015	23-09-2015	23-09-2015	29-09-2015	29-09-2015	29-09-2015	29-09-2015	29-09-2015	29-09-2015	07-10-2015	07-10-2015	07-10-2015	07-10-2015	07-10-2015	07-10-2015	21-10-2015	21-10-2015	21-10-2015	21-10-2015	21-10-2015	21-10-2015	28-10-2015	28-10-2015	28-10-2015	28-10-2015	28-10-2015	28-10-2015	04-11-2015	04-11-2015	04-11-2015	04-11-2015	04-11-2015	04-11-2015
	246	246	246	246	246	246	252	252	252	252	252	252	1	259	259	259	259	259	259	1	266	266	266	266	266	266	272	272	272	272	272	272	280	280	280	280	280	280	294	294	294	294	294	294	301	301	301	301	301	301	308	308	308	308	308	308
L4 - AR1													spring avg		S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6		
5 cm			2,7	16,8	7,3	5,2			16,3	15,0	17,9	14,3	13,4		548,6	186,9	588,2	1468,9			92,8	435,4	60,6	97,1			2,9	17,9	2,4	12,8			9,3	8,4	20,2	15,7			6,2	7,2	12,9	53,9			2,7		13,7	21,8			1,4	5,0	7,4	22,6		
10 cm			5,2	8,8	7,8	14,5			16,9	15,9	35,9	26,7	9,4		1059,0	1276,9	1349,5	1209,9			116,7	190,0	2268,3	220,2			3,5	4,2	14,3	22,6			2,2	10,2	6,4	21,9			2,0	21,7	6,1	121,2			1,5	31,6	6,0	83,4			2,3	13,5	3,5	57,5		
20 cm			58,7	25,0	0,0	37,9			309,7	69,8	196,5	30,6				178,3	120,6	391,6			11,6	54,4	173,2	1430,3			1,0	23,1	3,2	1547,4			1,6	10,4	1,5	833,6			1,7	6,3	2,4	208,5			0,9	6,9	2,2	53,7			1,5	7,4	1,6	26,4		
50 cm			21,7	31,2	37,5	37,0			61,7	60,6	156,6	84,5	340,0		115,7	71,9	52,0	92,8			27,9	57,8	38,4	288,7			2,1	9,7	6,0	191,1			1,4	1,9	0,4	60,5			0,7	1,0	20,1				0,5	0,9	1,3	11,7			0,5	1,1	0,5	7,5		
100 cm			169,6	189,5	59,7	216,0			187,8	237,9	221,4	320,3	424,2		1559,4	72,4	146,1	1197,4				140,7	295,7					144,5	129,0				298,7	148,4	399,6	200,7			407,4	314,4	846,9	141,9			246,0	262,6	659,7	92,5			254,0	314,7	540,4	94,8		

Date	31-08-2015	31-08-2015	31-08-2015	31-08-2015	31-08-2015	31-08-2015	02-09-2015	02-09-2015	02-09-2015	02-09-2015	02-09-2015	02-09-2015	08-09-2015	08-09-2015	08-09-2015	08-09-2015	08-09-2015	08-09-2015	17-09-2015	17-09-2015	17-09-2015	17-09-2015	17-09-2015	17-09-2015	22-09-2015	22-09-2015	22-09-2015	22-09-2015	22-09-2015	22-09-2015	06-10-2015	06-10-2015	06-10-2015	06-10-2015	06-10-2015	06-10-2015	20-10-2015	20-10-2015	20-10-2015	20-10-2015	20-10-2015	20-10-2015	27-10-2015	27-10-2015	27-10-2015	27-10-2015	27-10-2015	27-10-2015	42318	42318	42318	42318	42318	42318
	243	243	243	243	243	243	245	245	245	245	245	245	251	251	251	251	251	260	260	260	260	260	260	265	265	265	265	265	265	279	279	279	279	279	279	293	293	293	293	293	293	300	300	300	300	300	300	314	314	314	314	314	314
L12 - AR2			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6			S3	S4	S5	S6								
5 cm									1,0	0,8					16,0	4,4					1,1	1,2					0,8	0,6					21,4	3,2					20,3	1,9					11,1	1,0					471,4	33,4				
10 cm									1,0	1,1					21,0	5,7					2,5	2,2					1,8	0,6					5,7	1,3					2,4	1,2					1,6	1,6					52,6	73,6				
20 cm									50,6	2,6					133,1	91,9					5,0						2,7	1,7					1,0	1,4					0,6	7,1					0,5	3,4					4,4	7,5				
50 cm									6,0	38,5					10,6	227,6					0,7	40,4					0,5	1,3					0,9	1,4					0,6	2,0					0,5	0,7					1,0	1,2				
100 cm									0,9	3,2					1,0	7,5					0,2	3,0					0,2	0,2					0,3	0,3																						