Table S1. Number of studies on DCD and DMPP included in Akiyama et al. (2009), Ábalos et al. (2014), Gilsanz et al. (2016) and Yang et al. (2016).

Study	DCD	DMPP
Akiyama et al. (2009)	42	12
Ábalos et al. (2014)	18	9
Gilsanz et al. (2016)	89	22
Yang et al. (2016)	71	29

Table S2. Correlation between N_2O flux and (a) climatic parameters, (b) soil analysis, (c) field data and (d) leachate analysis (Spearman rank correlation coefficient and level of significance: *, $p<0.05$; **, $p<0.01$; and ***, $p<0.001$).

a) Climatic data

	Treatment plot	Control plot
Pressure	-0.327**	-0.382***
Precipitation	0.322**	0.215
Precipitation 2h	0.318**	0.448***
Precipitation 1d	0.318**	0.500***
Precipitation 3d	0.448***	0.674***
Humidity	0.253*	0.223*
Humidity 2h	0.195	0.306**
Humidity 1d	0.01	0.294**
Humidity 3d	0.061	0.333**
Air temperature	0.331**	0.291**
Air Temperature 2 cm	0.166	0.346**
Soil temperature	0.282*	0.361***
Soil temperature 2h	0.299**	0.287**
Soil temperature 1d	0.439***	0.256*
Soil temperature 3d	0.509***	0.235*
Min. soil temperature	0.237*	0.327**
Max. soil temperature	0.159	0.415***

2h: average value for the 2 hours before the measurement; 1d: average value for the 24 hours before the measurement; 3d: average value for the 72 hours before the measurement

b) Field parameters

	Treatment plot	Control plot
Temperature 5 cm	0.325**	0.168
Temperature 10 cm	0.458***	0.135
Temperature 20 cm	0.512***	0.163
Temperature 30 cm	0.575***	0.194
Soil moisture	0.226	0.031
WFPS	0.212	-0.008
WFPS 3d	0.248*	0.267*
WFPS 5d	0.257*	0.114

WFPS 7d	0.318*	-0.068

Temperature measured at different depths. WFPS: water-filled pore space; 3d: average value for the 72 hours before the measurement; 5d: average value for the 120 hours before the measurement; 7d: average value for the 168 hours before the measurement

c) Soil data

	Treatment plot	**Control plot**
pH_{KCl}	0.376*	-0.008
DM	-0.709***	-0.610***
NO_3^--N	0.122	-0.2
NH_4^+-N	0.296	0.464**
P	0.045	-0.113
K	-0.2	-0.491**
Ca	-0.038	-0.054
Mg	-0.106	0.138
OM	0.08	-0.721***
N	-0.313	-0.223
C	0.546***	-0.247
S	-0.796***	-0.577**
DN	0.274	-0.029
DC	-0.201	-0.513**
DOC	-0.201	-0.397*

DM: dry matter; OM: organic matter; DN: dissolved nitrogen; DIC: dissolved inorganic nitrogen; DC: dissolved carbon; DOC: dissolved organic carbon. na: non available.

d) Leachate

	Treatment plot	**Control plot**
NH_4^+-N	-0.586*	0.388**
NO_3^--N	0.832***	-0.394**
PO_4-P	0.586*	0.792***
P_{tot}	0.586*	0.799***
pH	-0.586*	0.073
TN	0.832***	-0.349*
TOC	0.832***	0.372**
DOC	0.586*	0.548***
TC	-0.246	0.421**
DC	-0.246	0.452***
TIC	-0.246	0.357**
DIC	-0.246	0.393**
DN	0.832***	-0.408**

TN: total nitrogen; TOC: total organic carbon; DOC: dissolved organic carbon; TC: total carbon; DC: dissolved carbon; TIC: total inorganic carbon; DIC: dissolved inorganic nitrogen; DN: dissolved nitrogen

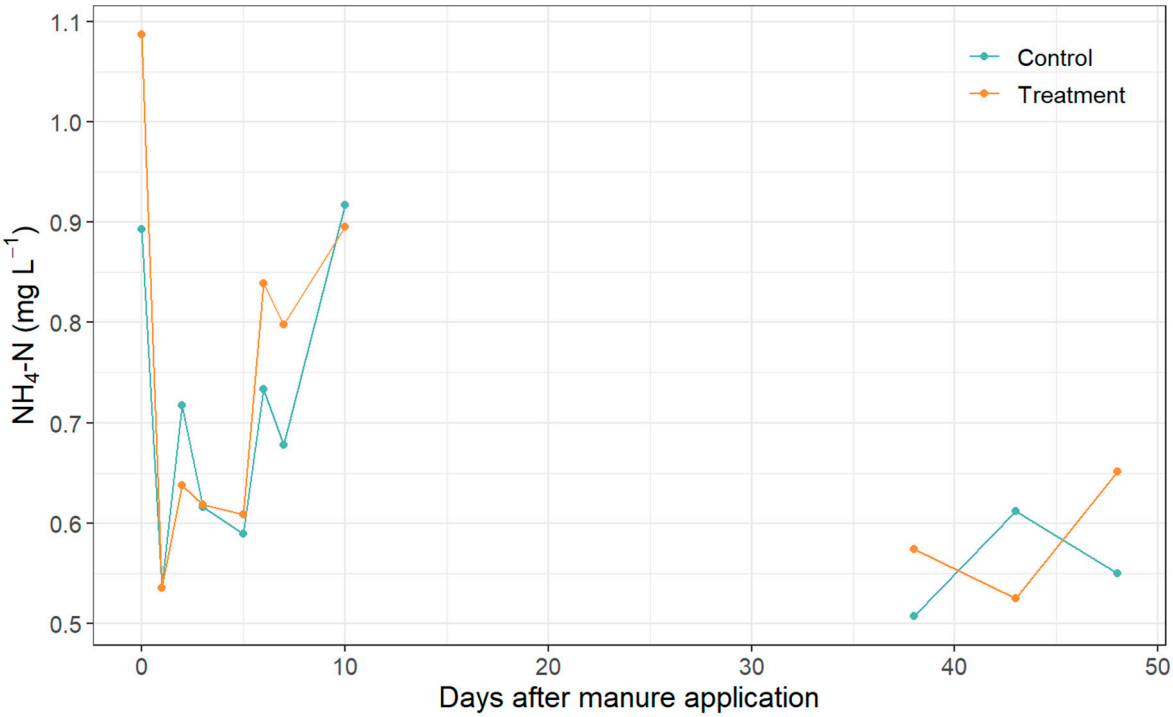

Fig S1. Evolution of ammonium (NH_4^+-N) concentration in leachate (mg L^{-1}).

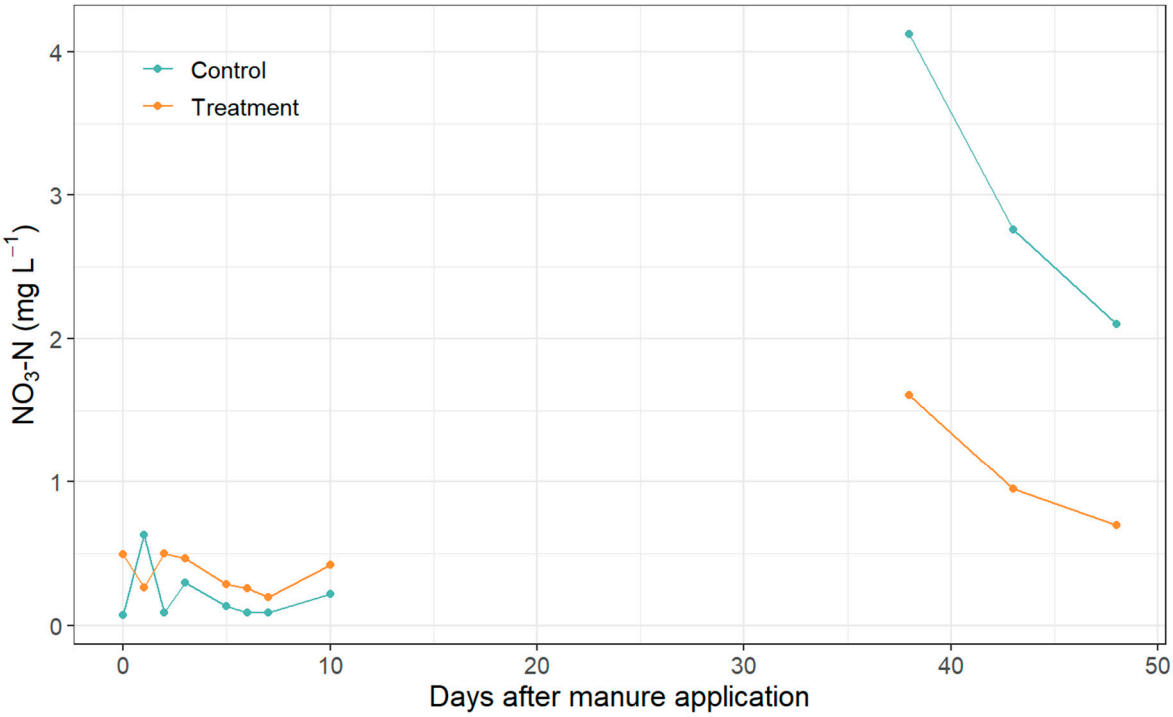

Fig S2. Evolution of nitrate (NO_3^--N) concentration in leachate (mg L^{-1}).

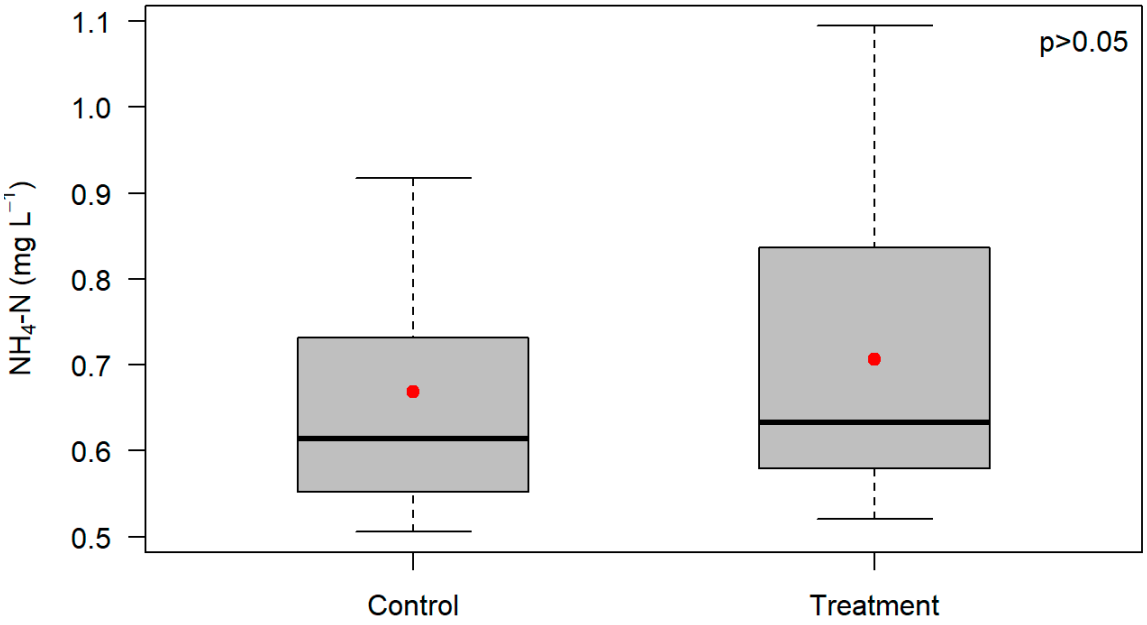

Fig S3. Ammonium (NH_4^+-N) concentrations in leachate (mg L^{-1}).

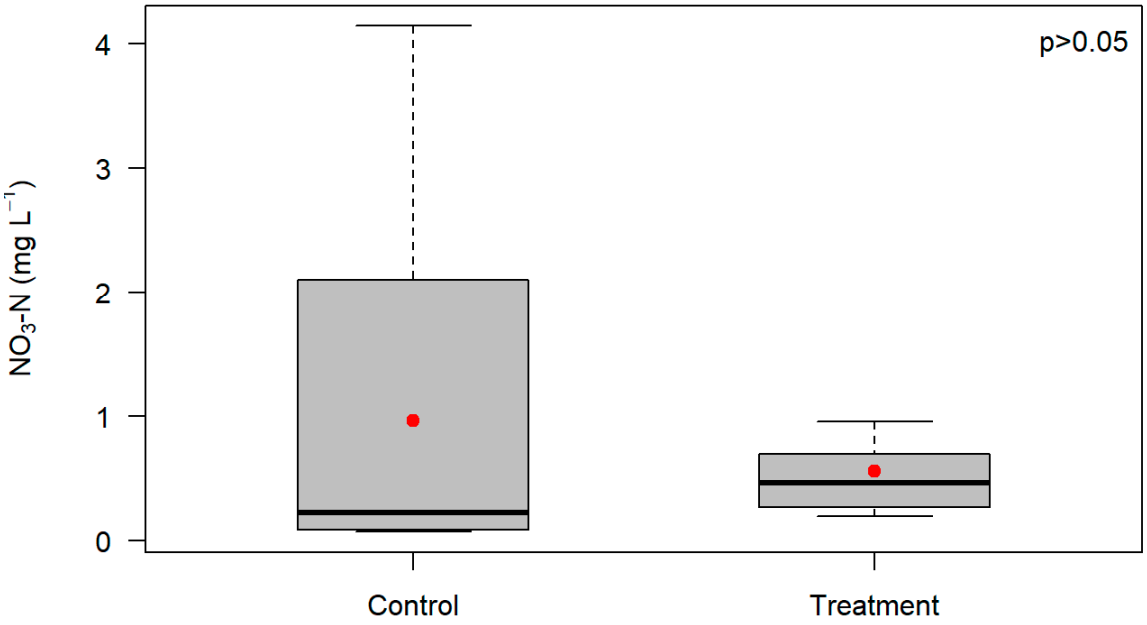

Fig S4. Nitrate (NO_3^--N) concentrations in leachate (mg L^{-1}).