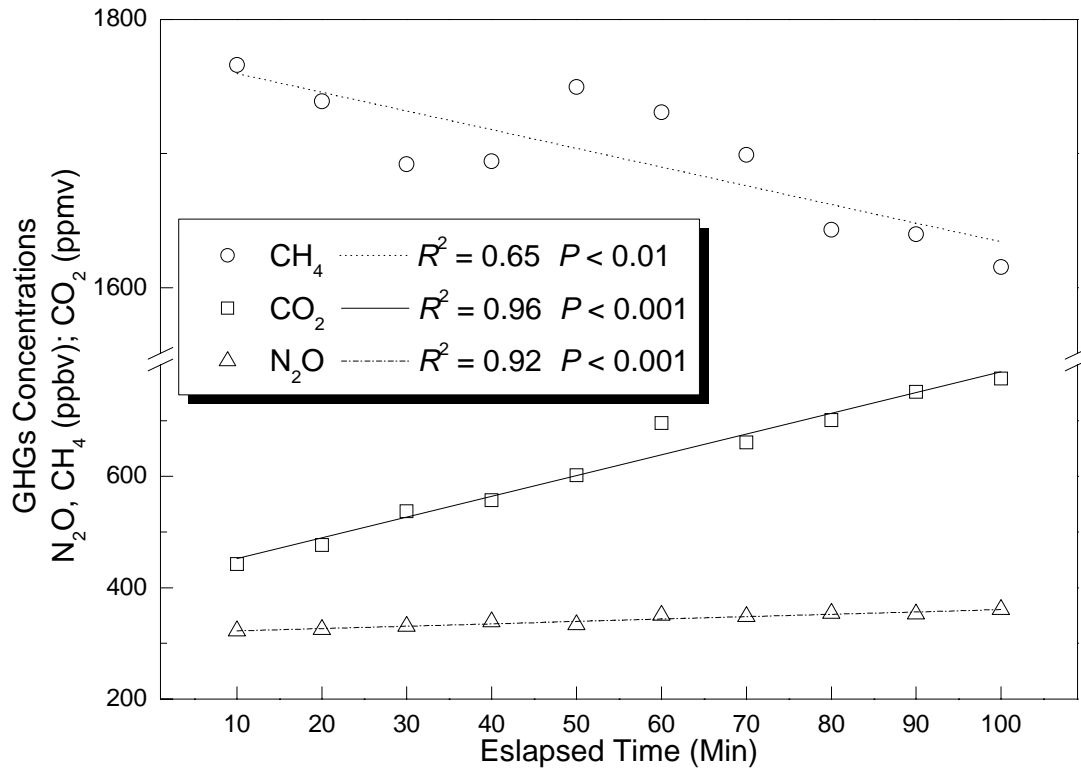


1 **Supplementary Material**

2 **S1.** Linear fitting of GHGs (greenhouse gases) concentrations in the enclosure chambers
3 against time. Measured in the pre-experiment in October 2006. The GHG
4 concentrations remained linear for up to 100 min after the chamber was closed in our
5 sampling.

6



7

1 **S2.** Results (*p*-value) of two-way ANOVA on the effects of Nitrogen (N), Phosphorus (P) and their interactions on the soil fluxes of CH₄, N₂O,
 2 and CO₂. Spring from April to June, summer from July to September, fall from October to December, winter from January to March.

CH ₄	2007		2008			2009				
	Spring	Summer	Fall	Winter	Spring	Summer	Fall	Winter	Spring	Summer
N	0.403	0.157	0.055	0.199	0.026	0.211	0.077	0.111	0.021	0.028
P	0.109	0.004	0.018	0.011	0.024	0.014	0.068	0.101	0.020	0.013
N×P	0.363	0.130	0.318	0.112	0.400	0.524	0.813	0.363	0.384	0.808
N ₂ O										
N	0.012	0.477	0.072	0.039	0.617	0.753	0.099	0.240	0.520	0.727
P	0.291	0.503	0.502	0.203	0.279	0.909	0.169	0.256	0.388	0.047
N×P	0.506	0.740	0.519	0.045	0.710	0.464	0.811	0.498	0.151	0.132
CO ₂										
N	0.762	0.525	0.987	0.927	0.699	0.935	0.654	0.490	0.309	0.597
P	0.278	0.031	0.076	0.167	0.053	0.062	0.453	0.256	0.008	0.026
N×P	0.240	0.270	0.235	0.859	0.714	0.673	0.610	0.704	0.129	0.118

3

1 **S3.** CH₄ and N₂O fluxes calculated as the global warming potential (GWP), from the treatment and control plots. Units are CO₂ equivalent (g
 2 CO₂ m⁻² yr⁻¹), based on IPCC conversion factors. Negative values indicate a global warming mitigation potential. Soil CO₂ flux values were
 3 listed for comparison purpose.

Treatments	C	N	P	NP
GHGs				
N ₂ O	57.38 a	71.56 b	57.37 a	65.36 a
CH ₄	-9.10 a	-6.88 b	-11.32 c	-9.81 a
Net GWP	48.28 a	64.68 b	46.05 a	55.55 ab
CO ₂	2289.46 a	2244.31 a	2837.66 b	2779.05 b

4