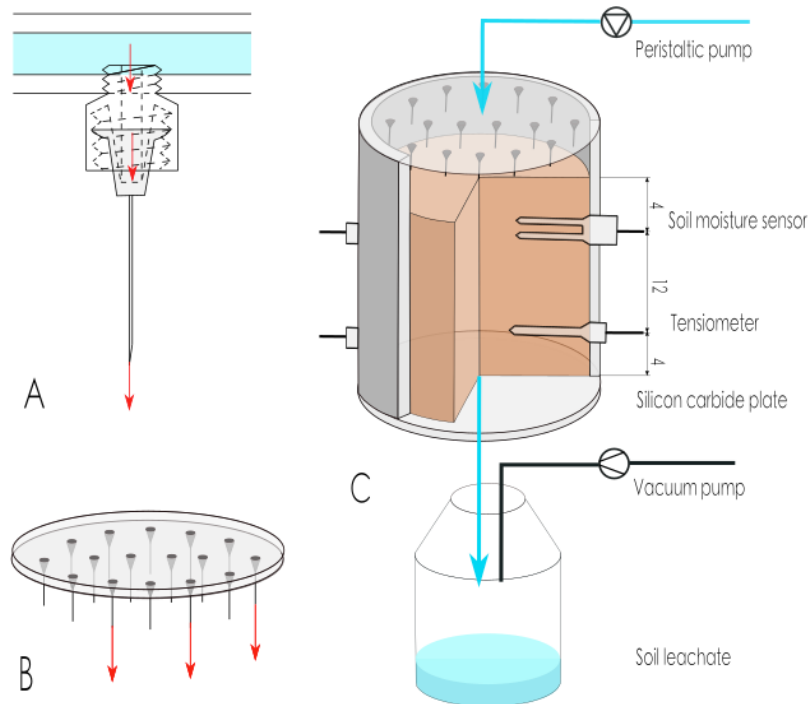**Supplementary materials**

Figure S1. Schematic illustration of a lysimeter subunit (the whole setup consisted of 16 identical subunits): (**A**) sprinkling unit, needle for light rain; (**B**) sprinkling head accomplished with 16 needles; (**C**) lab lysimeter with PVC-shell, sprinkling head, sensors (for soil moisture and tension) and a suction plate; numbers in cm revealing the dimension of the soil core.

Table S1. Basic soil properties of the soil cores for the lysimeter set-up (before refers to values prior to experiment, after refers to values after experiment; control = without fertilization, mineral = mineral fertilizer, organic = organic fertilizer). Mean (± SD), (n=3). Soil classification follows the Austrian classification system.

Parameter	Unit	Silt Loam		Loamy Sand	
		0–8 cm	8–16 cm	0–8 cm	8–16 cm
Water content	% Mass	18.9 ± 1.2	28.3 ± 1.7	14.3 ± 0.1	12.0 ±0.6
pH (CaCl$_2$)	-	6.6 ± 0.0	6.6 ± 0.0	7.6 ± 0.0	7.6 ±0.0
TOC[initial]	% C	1.4 ± 0.0	1.5 ± 0.0	0.8 ± 0.1	0.6 ±0.2
TOC control[after]	M%	1.4 ± 0.0	1.4 ± 0.1	0.5 ± 0.1	0.5 ± 0.1
TOC mineral[after]	M%	1.4 ± 0.1	1.4 ± 0.1	0.5 ± 0.1	0.4 ± 0.2
TOC organic[after]	M%	1.4 ± 0.1	1.3 ± 0.0	0.5 ± 0.1	0.4 ± 0.1
CaCO$_3$[initial]	M % CaCO$_3$	<0.9	<0.9	20.5 ± 0.1	21.8 ± 0.9
CaCO$_3$ control[after]	M%	<0.9	<0.9	21.9 ± 0.9	21.9 ± 1.2
CaCO$_3$ mineral[after]	M%	<0.9	<0.9	21.5 ± 0.3	22.4 ± 1.7
CaCO$_3$ organic[after]	M%	<0.9	<0.9	21.8 ± 0.4	22.1 ± 0.8
Bulk density	g cm^{-3}	1.28 ± 0.05	1.40 ± 0.02	1.39 ± 0.01	1.44 ± 0.00
Hydraulic conductivity	cm d^{-1}	0.02 ± 0.01	0.06 ± 0.03	2.81 ± 1.30	1.17 ± 0.31
Coarse material	%	-	-	0.1 ± 0.0	0.1 ± 0.0
Sand	%	6.6 ± 0.1	6.3 ± 0.5	54.8 ± 0.7	57.7 ± 2.8
Silt	%	65.2 ± 0.4	65.2 ± 0.2	35.5 ± 0.6	34.3 ± 1.9
clay	%	28.2 ± 9.5	28.5 ± 9.5	9.6 ± 0.2	7.9 ± 0.9