

Supplement of Biogeosciences Discuss., 12, 14245–14269, 2015
<http://www.biogeosciences-discuss.net/12/14245/2015/>
doi:10.5194/bgd-12-14245-2015-supplement
© Author(s) 2015. CC Attribution 3.0 License.



Supplement of

Sediment source attribution from multiple land use systems with CSIA

C. Alewell et al.

Correspondence to: C. Alewell (christine.alewell@unibas.ch)

The copyright of individual parts of the supplement might differ from the CC-BY 3.0 licence.

1 **Tables S1 – S2**

2 Table S1: Input values for all calculations. Sources for the downstream sites A and B were averages of the sources at the site and the
 3 upstream sources. Source type F = forest, P= pasture and A= arable land. Source type AP describes the averaged value of arable land
 4 and pasture. Event abbreviations BF = base flow, HF = high flow. The sum of FA concentration (Σ) and % C(Org) are the conversion
 5 factors when weighting sediment contribution %.

Site	Source	C14:0 FA		C26:0 FA		C28:0 FA		Σ c C26/C28FA	Σ c C14/C26FA	%C (org)
		d13C	$\mu\text{g/g dry soil}$	d13C	$\mu\text{g/g dry soil}$	d13C	$\mu\text{g/g dry soil}$			
A	F	-33.6 ± 0.6	3.8	-34.6 ± 1.0	4.9	-34.5 ± 0.3	7.0	11.9	8.7	3.4 ⁶
A	P	-33.8 ± 1.1	2.0	-36.3 ± 0.3	5.7	-37.2 ± 1.2	4.3	10.0	7.7	3.5 ⁷
AB	F	-33.4 ± 0.5	2.6	-34.3 ± 0.9	6.0	-34.2 ± 0.6	10.1	16.1	8.6	3.1 ⁸
AB	P	-33.3 ± 1.0	2.3	-36.6 ± 0.9	10.8	-37.9 ± 1.5	6.2	17.0	13.1	3.8 ⁹
AB	A	-31.6 ± 1.1	1.3	-36.1 ± 0.2	6.0	-37.0 ± 0.6	3.7	9.7	7.3	2.4 ¹⁰
AB	AP	-32.4 ± 1.3	1.8	-36.3 ± 0.8	8.4	-37.5 ± 1.3	5.0	13.4	10.2	3.1 ¹¹
ABC	F	-33.5 ± 0.6	4.5	-34.2 ± 0.9	7.3	-34.2 ± 0.7	15.3	22.5	11.8	3.0 ¹²
ABC	P	-33.2 ± 1.1	2.0	-36.6 ± 0.8	9.7	-37.5 ± 1.3	5.7	15.4	11.8	3.5 ¹³
ABC	A	-31.8 ± 0.8	1.1	-36.3 ± 0.8	5.7	-37.2 ± 0.9	3.5	9.2	6.8	2.1 ¹⁴
ABC	AP	-32.5 ± 1.2	1.6	-36.4 ± 0.8	7.7	-37.4 ± 1.1	4.6	12.3	9.3	2.8 ¹⁵
SS	Event									
A	BF	-38.4 ± 0.5	15.2	-34.8 ± 0.5	14.8	-35.4 ± 0.5	14.1	28.9	30.0	6.2 ¹⁶
A	HF 2010	-33.9 ± 0.5	3.1	-34.5 ± 0.5	2.0	-35.1 ± 0.5	1.9	3.9	5.1	1.5 ¹⁷
A	HF 2009	-35.3 ± 0.5	5.1	-34.9 ± 0.5	3.6	-35.7 ± 0.5	4.3	7.9	8.7	2.5 ¹⁸
B	BF	-37.6 ± 0.5	14.2	-35.6 ± 0.5	9.3	-36.2 ± 0.5	9.6	18.9	23.5	7.8 ¹⁹
B	HF 2010	-33.3 ± 0.5	3.4	-34.0 ± 0.5	1.6	-34.7 ± 0.5	1.9	3.5	5.0	2.3 ²⁰
B	HF 2009	-33.1 ± 0.5	3.3	-34.5 ± 0.5	2.0	-35.0 ± 0.5	2.4	4.4	5.3	2.4 ²¹
C	BF	-35.1 ± 0.5	7.8	-35.0 ± 0.5	7.1	-36.1 ± 0.5	7.5	14.6	14.9	6.9 ²²
C	HF 2010	-34.2 ± 0.5	2.4	-34.4 ± 0.5	2.7	-35.0 ± 0.5	3.0	5.7	5.1	1.6 ²³
C	HF 2009	-34.8 ± 0.5	3.3	-34.7 ± 0.5	3.1	-35.4 ± 0.5	3.1	6.2	6.4	n.a. ²³

25 Table S2: Results (p-values) of statistical t-tests for significant differences between source areas (sources are merged over the study
 26 site). Bold values are considered as significantly different ($p < 0.05$).

27

	C14:0 FA	C16:0 FA	C18:0 FA	C20:0 FA	C22:0 FA	C24:0 FA	C26:0 FA	C28:0 FA
Forest/Pasture	0.459	0.318	0.020	0.273	0.014	0.022	0.001	0.018
Forest/Arable land	0.032	0.460	0.010	0.385	0.027	0.156	0.017	0.008
Arable land/Pasture	0.043	0.055	0.473	0.223	0.879	0.994	0.490	0.665

28

