

Table S1: Soil samples names, land-use and CSIA results. stdev: standard deviation of triplicate measurements.

Soil sample name	Land-use	C24:0 mean	C24:0 stdev	C26:0 mean	C26:0 stdev	C28:0 mean	C28:0 stdev
Aa	Arable land	-34.24	0.28	-34.73	0.02	-35.85	0.38
Ab	Arable land	-32.83	0.10	-34.30	0.23	-35.33	0.29
Ac	Arable land	-32.25	0.37	-34.22	0.46	-35.37	0.49
Ad	Arable land	-31.50	0.21	-33.85	0.08	-35.23	0.12
Fa	Forest (mixed)	-32.59	0.19	-34.26	0.19	-35.32	0.09
Fb	Forest (mixed)	-34.00	0.41	-34.45	0.31	-34.10	0.49
Fc	Forest (mixed)	-32.58	0.14	-33.43	0.04	-34.42	0.17
Fd	Forest (mixed)	-32.51	0.08	-33.10	0.36	-33.89	0.50
Fe	Forest (mixed)	-33.10	0.10	-33.87	0.06	-34.63	0.11
Oa	Orchard	-32.84	0.41	-34.14	0.15	-35.05	0.29
Ob	Orchard	-33.24	0.18	-34.43	0.12	-35.01	0.09
Oc	Orchard	-33.21	0.47	-34.55	0.35	-35.29	0.15
Od	Orchard	-32.43	0.47	-33.29	0.26	-34.52	0.29
Oe	Orchard	-33.51	0.16	-34.83	0.15	-35.16	0.33
PGa	Permanent grassland	-35.00	0.31	-35.71	0.29	-37.10	0.18
PGb	Permanent grassland	-34.51	0.49	-35.56	0.48	-36.15	0.17
PGc	Permanent grassland	-34.11	0.41	-35.23	0.16	-36.32	0.25
TGa	Temporary grassland	-34.34	0.18	-35.58	0.12	-36.73	0.27
TGb	Temporary grassland	-33.74	0.14	-35.06	0.21	-36.64	0.15
TGc	Temporary grassland	-34.83	0.16	-35.68	0.30	-36.33	0.45
TGd	Temporary grassland	-33.23	0.26	-34.90	0.37	-36.30	0.31

Table S2: Lake sediment core samples depth, age, and CSIA results. stdev: standard deviation of triplicate measurements.

Depth (mm)	Age CE	C24:0 mean	C24:0 stdev	C26:0 mean	C26:0 stdev	C28:0 mean	C28:0 stdev
000-009	Post-1995	-36.27	0.38	-34.39	0.22	-34.75	0.08
018-027	Post-1995	-35.20	0.29	-34.20	0.29	-34.66	0.30
042-052	1989-1992	-33.90	0.49	-33.53	0.45	-34.83	0.39
061-077	1982-1985	-36.01	0.23	-34.65	0.50	-34.63	0.26
092-100	1976-1978	-37.74	0.50	-34.25	0.22	-34.36	0.38
111-128	1970-1972	-33.68	0.44	-33.69	0.32	-36.11	0.35
142-157	1964-1966	-33.34	0.34	-33.59	0.28	-37.81	0.12
164-173	1957-1960	-32.94	0.20	-33.76	0.28	-34.11	0.48
175-184	1956 (Turbidite)	-33.34	0.18	-33.14	0.42	-32.92	0.25
193-204	1950-1952	-36.71	0.50	-33.95	0.33	-34.34	0.16
211-225	1944-1946	-36.26	0.46	-33.96	0.29	-34.04	0.13
234-245	1938-1940	-37.83	0.50	-35.61	0.39	-35.86	0.14
259-270	1932-1934	-39.03	0.49	-36.05	0.44	-35.63	0.38
283-295	1926-1928	-38.94	0.45	-37.50	0.34	-35.91	0.13
305-315	1920-1922	-38.70	0.42	-35.64	0.14	-35.06	0.16
325-333	1914-1916	-40.10	0.48	-36.58	0.25	-36.34	0.42
345-353	1908-1910	-39.13	0.37	-37.76	0.23	-36.02	0.12
363-370	1902-1904	-36.05	0.28	-37.27	0.33	-35.83	0.47
381-389	1896-1898	-35.65	0.33	-35.77	0.16	-33.63	0.50
399-406	1890-1892	-35.16	0.40	-35.00	0.37	-33.55	0.28
415-418	1885-1886	-36.25	0.23	-35.85	0.39	-34.70	0.27
440-453	Pre-1885	-35.30	0.44	-35.23	0.19	-34.07	0.33

Table S3: Orchard composition and age, defined from aerial pictures.

Orchard name	Type of tree	Plot used as orchard since...
Oa	Pear trees	Less than 10 years
Ob	Vines	25 years
Oc	Apple trees	20 years
Od	Apple trees	20 years
Oe	Apple trees	40 years