Supporting Information

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The impact of mineral composition on the yield and preservation of selected fatty acids in replicate archeological ceramics

Jan-Michael C. Cayme [1,*], Signe Vahur [1], Anu Teearu [1], Ester Oras [1,2,3] and Ivo Leito [1]

[1] *Institute of Chemistry, University of Tartu, Ravila 14A, 50411, Tartu, Estonia*
[2] *Department of Archaeology, University of Tartu, Jakobi 2, 51014, Tartu, Estonia*
[3] *Swedish Collegium for Advanced Study (SCAS), Linneanum, Thunbergsvägen 2, 752 38, Uppsala, Sweden*

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Table S1: Percentage yield of $C_{16:0}$ and $C_{18:1}$ in two replicates of the sand- and chalk-tempered briquettes for non-degraded and degraded samples using ACM

	Non-Degraded				**Degraded**			
	Replicate 1	Replicate 2	Replicate 1	Replicate 2	Replicate 1	Replicate 2	Replicate 1	Replicate 2
Clay with sand (S) temper in %	$C_{16:0}$	$C_{16:0}$	$C_{18:1}$	$C_{18:1}$	$C_{16:0}$	$C_{16:0}$	$C_{18:1}$	$C_{18:1}$
S-75	93.71	89.42	91.22	87.39	90.61	87.07	75.26	76.00
S-50	94.63	89.43	94.96	84.47	92.74	85.47	67.92	68.22
S-25	82.46	88.77	85.25	84.39	86.94	84.71	51.99	67.53
S-0	88.03	94.37	83.65	92.94	91.79	77.40	28.28	39.27
Clay with chalk (CH) temper in %	$C_{16:0}$	$C_{16:0}$	$C_{18:1}$	$C_{18:1}$	$C_{16:0}$	$C_{16:0}$	$C_{18:1}$	$C_{18:1}$
CH-45	71.05	64.29	66.01	60.98	64.89	57.82	47.77	51.20
CH-30	84.43	76.74	82.04	74.17	77.67	75.72	76.54	74.26
CH-15	89.03	83.62	88.00	82.17	85.46	79.65	83.02	77.57
CH-5	90.33	88.15	86.48	90.80	84.54	83.61	73.16	82.07

Table S2: Percentage yield of $C_{16:0}$ and $C_{18:1}$ in two replicates of the sand- and chalk-tempered briquettes for non-degraded and degraded samples using TMTFTH

	Non-Degraded				**Degraded**			
	Replicate 1	Replicate 2	Replicate 1	Replicate 2	Replicate 1	Replicate 2	Replicate 1	Replicate 2
Clay with sand (S) temper in %	$C_{16:0}$	$C_{16:0}$	$C_{18:1}$	$C_{18:1}$	$C_{16:0}$	$C_{16:0}$	$C_{18:1}$	$C_{18:1}$
S-75	25.74	28.77	27.07	30.31	29.86	30.31	22.17	23.91
S-50	31.20	-	33.69	-	39.20	-	26.71	-
S-25	40.74	42.30	42.61	43.50	57.49	53.93	27.33	24.49
S-0	58.18	-	57.92	-	52.79	-	15.22	-
Clay with chalk (CH) temper in %	$C_{16:0}$	$C_{16:0}$	$C_{18:1}$	$C_{18:1}$	$C_{16:0}$	$C_{16:0}$	$C_{18:1}$	$C_{18:1}$
CH-45	5.92	6.82	5.18	5.62	4.48	5.88	2.87	3.53
CH-30	3.17	-	2.76	-	4.90	-	3.25	-
CH-15	5.25	5.58	5.30	5.42	9.84	10.41	8.23	8.05
CH-5	19.25	-	20.33	-	25.93	-	21.09	-

Table S3: Average percentage yield of $C_{16:0}$ and $C_{18:1}$ in sand-tempered briquettes for non-degraded and degraded samples using TMTFTH.

Clay with sand (S) temper in %	**Non- Degraded**		**Degraded**	
	$C_{16:0}$	**$C_{18:1}$**	**$C_{16:0}$**	**$C_{18:1}$**
S-75[a]	27.3 (2.1)	28.7 (2.3)	30.1 (0.3)	23.0 (1.2)
S-50	31.2[b]	33.7[b]	39.2 [b]	26.7 [b]
S-25[a]	41.5 (1.1)	43.1 (0.6)	55.7 (2.5)	25.9 (2.0)
S-0	58.2[b]	57.9[b]	52.8 [b]	15.2 [b]
Average[c]	40 (3)	41 (3)	44 (3)	23 (3)
m[d]	0.412	0.388	0.339	-0.097
95% CI of m[d]	0.346	0.269	0.462	0.396
Pooled standard deviation	1.7		1.7	

[a] Values in parentheses represent the standard deviations of two replicate measurements.
[b] No replicate measurement.
[c] Half-width of the 95% confidence interval in parentheses.
[d] Slope (m) of the regression line between the average yield of $C_{16:0}$ or $C_{18:1}$ relative to the percentage of clay in the briquettes and its half-width of 95% confidence interval.

Table S4: Average percentage yield of $C_{16:0}$ and $C_{18:1}$ in chalk-tempered briquettes for non-degraded and degraded samples using TMTFTH.

Clay with chalk (CH) temper in %	**Non- Degraded**		**Degraded**	
	$C_{16:0}$	**$C_{18:1}$**	**$C_{16:0}$**	**$C_{18:1}$**
CH-45[a]	6.4 (0.6)	5.4 (0.3)	5.2 (1.0)	3.2 (0.5)
CH-30	3.2 [b]	2.8 [b]	4.9 [b]	3.2 [b]
CH-15[a]	5.4 (0.2)	5.4 (0.1)	10.1 (0.4)	8.1 (0.1)
CH-5	19.2 [b]	20.3 [b]	25.9 [b]	21.1 [b]
Average[c]	9 (0.6)	8 (0.6)	12 (0.9)	9 (0.9)
m[d]	0.164	0.190	0.270	0.234
95% CI of m[d]	0.469	0.487	0.442	0.353
Pooled standard deviation	0.4		0.6	

[a] Values in parentheses represent the standard deviations of two replicate measurements.
[b] No replicate measurement.
[c] Half-width of the 95% confidence interval in parentheses.
[d] Slope (m) of the regression line between the average yield of $C_{16:0}$ or $C_{18:1}$ relative to the percentage of clay in the briquettes and its half-width of 95% confidence interval.

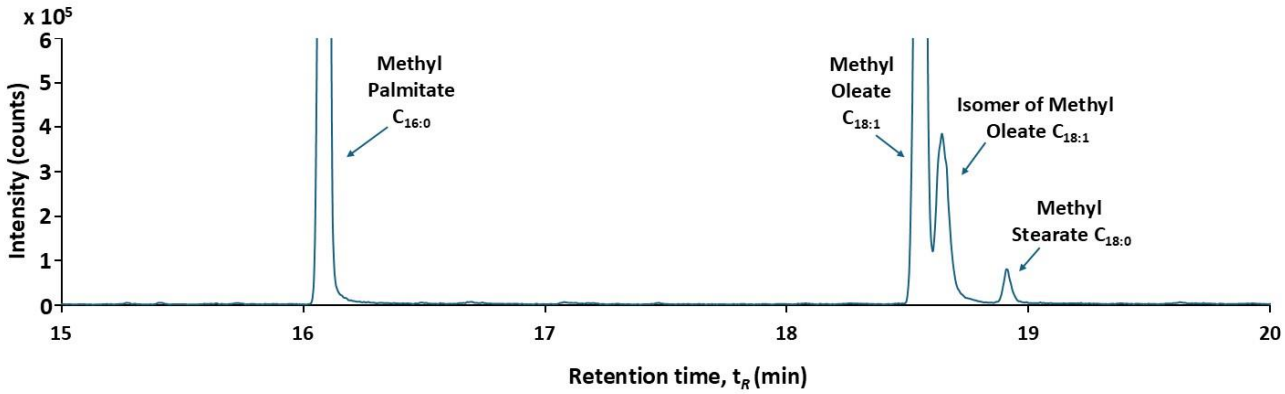

Figure S1: Representative chromatogram of the degraded (at 100°C for 14 h) S-25 sand-tempered briquette showing the trace peak of stearic acid ($C_{18:0}$) within the retention time from 15-20 min. The chromatogram was zoomed-in to make the $C_{18:0}$ peak visible.