

Table S1. Determined compounds and their relative amounts during 90-days storage in control cheese (C-cheese) produced using a commercial starter culture and cheese produced with commercial starter culture together with *Enterococcus faecium* HZ strain (E-cheese) (n = 2) ^{1,2}

Compound	C-cheese				E-cheese			
	Day 1	Day 30	Day 60	Day 90	Day1	Day 30	Day 60	Day 90
Alcohols								
Ethyl alcohol	0.74±0.85	1.69± 1.95	2.91± 1.05	4.27± 8.53	4.55± 4.35	4.43± 4.65	2.96± 3.41	7.34± 8.88
2-Butanol (CAS)	0	0		0.35±0.41	0	0.10±0.20	0.20±0.23	0.01±0.01
2-Methyl-1-propanol	0.51±1.02	1.78±2.07	1.75±2.03	0	0.32±0.63	0.19±0.39	0	1.34±1.58
3-Methylbutan-1-ol	24.99±2.48	23.75±7.46	20.27±19.05	14.74±1.56	20.70±3.13	10.33±5.54	8.71±4.49	14.41±23.4
3-Methyl-3-buten-1-ol	0.20±0.24	0.26±0.31	0.29±0.34	0.42±0.25	0.08±0.17	0.12±0.16	0.08±0.09	0.16±0.19
1-Pentanol	0	0	0	0	0.03±0.06	0	0	0
2-Heptanol	0	0	0	0.22±0.16	0	0	0	0.17±0.24
2-Methyl-2-buten-1-ol	0	0	0	0.19±0.38	0.04±0.08	0.08±0.13	0	0
1-Hexanol	0	0	0	0.41±0.53	0	0	0	0
2,3-dimethyl-2-butanol	1.01±0.08	0.46±0.57	0.81±0.62	0.76±0.39	5.48±9.29	0.48±0.32	0.32±0.37	0.34±0.68
2-ethyl-1-hexanol	0.38±0.20	0.65±0.35	0.37±0.24	0.34±0.09	3.32±5.67	0.48±0.20	0.33±0.07	0.34±0.25
2,3-Butanediol	0	0	0	0	0	0.65±0.74	0.40±0.46	0
3-(Methylthio)-1-propanol	0.80±1.03	5.86±6.85	2.32±2.86	0	0.26±0.32	0.08±0.15	0	0.05±0.10
Benzyl alcohol	0	0	0.16±0.19	0.18±0.36	0.49±0.97	0	0	0.04±0.08
Phenethyl alcohol	23.80±2.62	24.31±6.73	27.73±6.597	75.78±13.22	15.49±3.09	5.31±6.08	3.53±3.54	26.14±3.69
Alkanes								
n-Heptane	20.02±2.47	26.96±3.15	26.14±2.05	16.48±2.01	5.56±8.29	2.38±2.75	0	12.82±1.82
Toluene	0.13±0.15	0.26±0.30	0.41±0.59	0.19±0.39	0.25±0.29	0.36±0.11	0.37±0.14	0.41±0.44
<i>p</i> -xylene	0	0	0	0	0	0.04±0.07	0.07±0.08	0
2-methyl decane	0.16± 0.18	0.47± 0.94	0.16± 0.32	0	0	0	0	0

Nonane	0.52± 0.61	0.28± 0.56	0.32± 0.37	0.57± 0.66	0	0.27± 0.33	0.21± 0.24	0
2,2,4,6,6-pentamethyl heptane,	12.12±8.16	17.47±10.07	13.78±3.54	9.59±5.54	10.58±7.76	4.20±1.73	4.38±0.69	5.47±4.39
3-methyl nonane	1.32±0.92	2.23±1.50	1.60±0.71	1.62±0.86	1.43±1.10	0.92±0.14	1.07±0.31	0.85±0.76
n-Decane	2.81±1.76	5.16±2.83	3.68±1.64	3.63±2.29	4.71±0.90	2.33±0.37	2.52±0.83	2.24±1.80
4,6-dimethyl undecane	0.65±0.51	0.26±0.31	0.47±0.67	0.15±0.17	0.29±0.57	0	0.23±0.46	0
2-methyl decane	0	0	0	0.12±0.25	0	0	0	0
2,3,5-trimethyl decane	0	0	0	0.12±0.24	0	0	0	0
3-methyl undecane	0	0	0	0	0	0	0.23±0.46	0.34±0.68
9-methyl nonadecane	0	0	0	0	0	0	0	0
n-Dodecane	2.38±1.76	2.23±1.67	2.46±2.03	2.71±2.50	2.20±1.50	0.84±0.30	0.78±0.15	0.91±1.05
3-methyl tridecane	0.42±0.48	0.71±0.92	0	0.21±0.42	0	0	0	0
tetradecane	0.82±0.66	0.78±0.70	0.74±0.60	0	0.94±0.27	0.23±0.26	0.20±0.23	0.38±0.44
3,5-Dimethyldodecane	0.05±0.10	0.14±0.27	0.09±0.17	0.07±0.14	0.36±0.43	0.06±0.12	0	0
Acids								
Acetic acid	2.01±0.76	9.85±1.26	2.70±1.90	18.60±19.54	0.66±0.77	6.00±6.51	5.16±5.66	10.25±10.02
Formic acid	0	0	0	0	0.42±0.41	0	0	0
Propanoic acid	0.29±0.33	0.04±0.08	0.23±0.28	0.39±0.46	0.27±0.24	0.39±0.52	0.22±0.26	0.48±0.80
2-Metil propanoic acid	0.70±0.83	3.19±4.01	0.45±0.53	1.88±3.06	0.37±0.68	0	0	1.22±1.54
Butanoic acid	0	0	0.82±1.65	4.36±1.52	0.70±1.40	2.15±2.48	2.49±2.88	3.51±4.83
3-metil butanoic acid	3.08±3.73	8.13±33.15	0.49±0.58	4.35±8.12	3.17±4.65	0.86±1.72	0.00±0.00	3.01±3.84
Pentanoic acid	0	0	0	0	0	0.36±0.72	0.72±0.83	0
Hexanoic acid	0	0	0	0	3.90±7.79	3.17±3.66	3.21±3.71	0.75±0.92
Octanoic acid	0	0	0	0	0.28±0.34	3.24±3.58	2.72±3.14	3.47±6.93
Nonanoic acid	0	0	0	0	3.19±4.96	1.17±0.61	0.26±0.30	0.06±0.13
Decanoic acid	0	0	0	0	0.09±0.18	3.13±3.23	2.09±2.10	3.21±6.43
Dodecanoic acid	0	0	0	0	2.17±2.72	0.55±0.64	0.44±0.51	0

Aldehydes								
Pentanal	0.48± 0.45	2.71± 3.70	0	0	1.10± 2.20	0	0	0
Izobutylaldehyde	1.64± 3.27	0.60± 1.19	0	0	0	0	0	0
3-Metilbutylaldehyde	15.53± 4.63	7.08± 2.93	12.99±8.94	4.60± 6.16	10.00±1.44	4.07± 5.81	2.65± 1.54	5.81± 8.61
Hexanal	0	0	0	0	0.14±0.27	0	0	0
Metional	0.59±0.69	0.24±0.27	0.49±0.63	0	0.34±0.45	0.31±0.39	0.23±0.26	0±0.13
Benzaldehyde	0	0.16±0.18	0.24±0.29	0.42±0.57	0.62±0.17	0.14±0.17	0.13±0.15	0±0.19
2-Phenylpropenal	0	0	0.13±0.25	0.47±0.94	13.92±8.97	0	0	0
Phenylacetaldehyde	0	12.47±2.88	15.93±8.51	12.45±9.95	7.88±1.76	3.01±3.77	2.14±2.47	13.45±15.53
Octadecanal	0	0	0	0	0.36±0.56	0	0	0
2-(Methylthio)-2-fenilpropanal	0	0	0	0	0.99±1.98	0	0	0
Ketones								
2-Propanone	0	0	0	0	0.41± 0.81	0	0.84± 0.96	2.15± 2.50
2-Butanone	1.42± 0.49	1.96± 2.26	3.24± 0.48	6.96± 2.81	0.57± 1.15	0.62± 0.84	0.35± 0.41	1.03± 1.23
3-methyl-2-butanone	0	0	0	0	0±0.19	0	0.17±0.35	0
2-Pentanone	0.77±0.26	1.03±0.71	1.49±0.39	1.33±0.85	0.59±0.74	0.22±0.44	0.44±0.51	0.85±0.67
2,3-Pentanedione	0.12±0.14	0	0	0.03±0.05	0	0	0	0
2-Heptanone	0.69±0.15	1.40±0.32	0.54±0.69	0.43±0.51	0.40±0.79	0.90±0.60	1.29±0.15	0.61±1.21
2-Octanone	0	0	0	0.05±0.10	0.16±0.32	0.08±0.16	0.16±0.18	0.0±0.30
Cyclohexanone	0.38±0.26	0.31±0.36	0.56±0.58	0.61±0.31	0.45±0.32	0.52±0.17	0.39±0.03	0.33±0.40
3hydroxy-2butanone	2.46±0.81	0.51±0.65	0.75±0.61	0.60±0.66	4.99±4.42	1.13±1.14	2.09±1.50	3.04±4.07
2-Nonanone	0.28±0.20	0.57±0.38	0.89±0.71	0.89±0.40	0.17±0.33	0.47±0.09	0.39±0.06	1.63±1.89

2-Undecanone	0	0	0.12±0.24	0.05±0.10	0	0.16±0.19	0.12±0.14	0.20±0.39
Esters								
Methyl acetate	1.36±0.64	2.80± 0.71	1.65± 1.91	5.39± 4.67	0	0.87± 1.01	0.77± 0.88	0
Methyl butanoate	0	0	0	0	0	0	0	0.71±1.43
Ethyl butanoate	0	0	0	0.40±0.46	0	0	0	0.00±0.00
Methyl hexanoate	0	1.88±0.06	0.34±0.69	0.14±0.27	0	0.14±0.20	0.06±0.07	0
Ethyl hexanoate	0	0	0	0.10±0.11	0	0	0	0.61±1.07
Methyl octanoate	0	1.66±0.81	0	0	0.33±0.38	0	0	0
Methyl decanoate	0	1.31±0.38	0.31±0.39	0.11±0.21	0	0	0	0.40±0.52
Methyl dodecanoate	0	0	0.08±0.15	0.04±0.07	1.95±3.90	0	0	0.04±0.09
Methyl hexadecanoate	0	0	0	0	0.75±0.89	0	0	0.11±0.23
Lactones								
δ-Octalactone	0.23±0.20	0.47±0.32	0.28±0.33	0.63±0.18	1.07±1.09	0.39±0.16	0.42±0.18	0.64±0.74
δ-Nonalactone	0.27±0.54	0.13±0.26	0	0	1.28±1.90	0	0.58±1.16	0
δ-Decalactone	0.31±0.44	1.31±0.30	1.58±1.52	1.59±0.31	1.29±1.90	1.86±0.65	0.69±0.79	2.43±2.86
δ-Dodecalactone	0.08±0.16	0.43±0.05	0.49±0.44	0.38±0.30	0.34±4.26	0.51±0.11	0.51±0.11	0.77±0.85
Other compounds								
Limonene	0	0	0	0	0	0.19±0.00	0	0
α-Pinene	0	0	0	0	0.35±0.41	0.14±0.16	0.36±0.16	0.19±0.38
Thiazole	0	0	0	0	0.11±0.21	0.51±0.88	0	0.06±0.75
Dimethyl sulfone	0.25±0.12	0.19±0.13	0.11±0.21	0.13±0.16	0	0.23±0.26	0	0.06±0.12

¹: Relative amounts were calculated from the peak areas obtained using a DB-Wax column. Relative quantity ($\mu\text{g kg}^{-1}$) = (area of volatile compounds/area of internal standard) x quantity of internal standard x correction factor

²: Values are the mean of two injections (mean ± standard error)