

Table S2. Milk creaming. Processing parameters and chemical composition of starting bulk milk and residual final cream.

| Cheesemaking trials | | | Bulk milk (<i>composition</i>) | | | | Milk creaming process <i>starting parameters</i> | | | |
|---------------------------|------------------------------|----------|----------------------------------|-------------------|------------------------|--------------------|---|-----------------------|-------------------|-------------------------------------|
| Milk quality ¹ | Climatic period ² | trial nr | fat (%) | protein (%) | fat to protein (ratio) | dry matter (%) | environment temperature (°C) | milk temperature (°C) | milk pH | milk titratable acidity (°SH/50 ml) |
| L1 | C | 1a | 4.00 | 3.32 | 1.21 | 13.33 | 17.3 | 10,0 | 6.68 | 3.3 |
| | | 1b | 3.93 | 3.31 | 1.19 | 13.18 | 17.3 | 10,0 | 6.68 | 3.3 |
| L1 | W | 3a | 3.88 | 3.29 | 1.18 | 13.13 | 20.6 | 9.4 | 6.63 | 3.1 |
| | | 3b | 3.90 | 3.29 | 1.19 | 13.16 | 20.6 | 8.4 | 6.63 | 3.7 |
| L1 | W | 5a | 3.86 | 3.26 | 1.18 | 13.11 | 22.4 | 10.2 | 6.63 | 3.2 |
| | | 5b | 3.84 | 3.26 | 1.18 | 13.08 | 22.4 | 10,0 | 6.63 | 3.2 |
| L1 | W | 7a | 3.83 | 3.24 | 1.19 | 13.05 | 23.6 | 10.5 | 6.68 | 3.2 |
| | | 7b | 3.83 | 3.23 | 1.19 | 13.05 | 23.6 | 10.2 | 6.66 | 3.2 |
| L1 | C | 9a | 4.11 | 3.35 | 1.23 | 13.41 | 21,0 | 10.9 | 6.72 | 3.3 |
| | | 9b | 4.08 | 3.33 | 1.23 | 13.38 | 21,0 | 10.9 | 6.73 | 3.3 |
| L1 | C | 11a | 3.98 | 3.45 | 1.15 | 13.39 | 20,0 | 10.4 | 6.71 | 3.3 |
| | | 11b | 3.96 | 3.46 | 1.14 | 13.38 | 20,0 | 10.6 | 6.72 | 3.3 |
| | | average | 3.93 ^A | 3.32 ^A | 1.19 ^A | 13.22 ^A | 20.8 ^A | 10.1 ^A | 6.68 ^A | 3.3 ^A |
| | | SD | 0.09 | 0.07 | 0.03 | 0.14 | 2.1 | 0.7 | 0.04 | 0.1 |
| L2 | C | 2a | 3.85 | 3.33 | 1.16 | 13.12 | 21.0 | 10.0 | 6.66 | 3.1 |
| | | 2b | 3.85 | 3.32 | 1.16 | 13.07 | 21.0 | 10.0 | 6.67 | 3.1 |
| L2 | W | 4a | 3.79 | 3.37 | 1.12 | 13.10 | 21.7 | 10.2 | 6.70 | 3.1 |
| | | 4b | 3.79 | 3.36 | 1.13 | 13.09 | 21.7 | 9.7 | 6.69 | 3.1 |
| L2 | W | 6a | 3.84 | 3.32 | 1.16 | 13.06 | 23.9 | 10.2 | 6.78 | 3.1 |
| | | 6b | 3.82 | 3.33 | 1.15 | 13.04 | 23.9 | 10.2 | 6.70 | 3.1 |
| L2 | W | 8a | 3.70 | 3.35 | 1.10 | 12.99 | 22.5 | 10.7 | 6.68 | 3.1 |
| | | 8b | 3.72 | 3.35 | 1.11 | 13.01 | 22.5 | 10.3 | 6.67 | 3.1 |
| L2 | C | 10a | 3.92 | 3.60 | 1.09 | 13.42 | 20.3 | 10.1 | 6.80 | 3.3 |
| | | 10b | 3.86 | 3.60 | 1.07 | 13.38 | 20.3 | 10.3 | 6.78 | 3.3 |
| L2 | C | 12a | 3.98 | 3.60 | 1.11 | 13.47 | 23.0 | 11.0 | 6.76 | 3.4 |
| | | 12b | 3.97 | 3.59 | 1.11 | 13.47 | 23.0 | 10.7 | 6.76 | 3.4 |
| | | average | 3.84 ^B | 3.43 ^B | 1.12 ^B | 13.19 ^A | 22.1 ^A | 10.3 ^A | 6.72 ^B | 3.2 ^A |
| | | SD | 0.09 | 0.13 | 0.03 | 0.19 | 1.3 | 0.4 | 0.05 | 0.1 |

| Cheesemaking trials | | | Milk creaming process <i>ending parameters</i> | | | | | | Cream (composition) | | |
|---------------------------|------------------------------|----------|---|-----------------------|-------------------|-------------------------------------|---------------------|--------------------------------|------------------------|-------------------|--------------------|
| Milk quality ¹ | Climatic period ² | trial nr | environment temperature (°C) | milk temperature (°C) | milk pH | milk titratable acidity (°SH/50 ml) | creaming time (min) | separated cream, quantity (kg) | fat (%) | protein (%) | dry matter (%) |
| L1 | C | 1a | 17.4 | 13.0 | 6.61 | 3.4 | 371 | 28.61 | 21.02 | 2.80 | nd |
| | | 1b | 17.4 | 12.2 | 6.60 | 3.4 | 352 | 28.79 | 19.98 | 2.85 | nd |
| L1 | H | 3a | 21.5 | 13.8 | 6.66 | 3.2 | 334 | 32.23 | 19.49 | 2.84 | 27.26 |
| | | 3b | 22.2 | 14.0 | 6.65 | 3.2 | 353 | 31.46 | 19.73 | 2.83 | 27.48 |
| L1 | H | 5a | 23.7 | 15.4 | 6.63 | 3.3 | 360 | 33.77 | 21.67 | 2.76 | 29.31 |
| | | 5b | 24.1 | 16.0 | 6.73 | 3.2 | 385 | 34.09 | 22.16 | 2.74 | 29.78 |
| L1 | H | 7a | 24.4 | 16.2 | 6.68 | 3.2 | 360 | 36.52 | 20.93 | 2.76 | 28.57 |
| | | 7b | 24.7 | 16.1 | 6.66 | 3.3 | 380 | 38.15 | 21.58 | 2.74 | 29.20 |
| L1 | C | 9a | 21.8 | 15.4 | 6.79 | 3.3 | 406 | 31.31 | 22.57 | 2.81 | 30.29 |
| | | 9b | 21.8 | 15.3 | 6.79 | 3.3 | 390 | 31.60 | 21.33 | 2.82 | 29.07 |
| L1 | C | 11a | 20.0 | 15.1 | 6.73 | 3.4 | 418 | 37.40 | 20.96 | 2.89 | 28.80 |
| | | 11b | 20.0 | 15.1 | 6.73 | 3.4 | 425 | 35.45 | 21.54 | 2.87 | 29.30 |
| | | average | 21.6 ^A | 14.8 ^A | 6.69 ^A | 3.3 ^A | 378 ^A | 33.28 ^A | 21.08 ^A | 2.81 ^A | 28.91 ^A |
| | | SD | 2.5 | 1.3 | 0.06 | 0.1 | 28 | 3.16 | 0.95 | 0.05 | 0.94 |
| L2 | C | 2a | 21.2 | 14.4 | 6.75 | 3.3 | 390 | 36.50 | 20.05 | 2.84 | 27.80 |
| | | 2b | 20.7 | 14.2 | 6.73 | 3.3 | 360 | 35.28 | 20.70 | 2.81 | 28.40 |
| L2 | H | 4a | 22.4 | 14.8 | 6.68 | 3.1 | 360 | 38.07 | 19.99 | 2.86 | 27.75 |
| | | 4b | nd | 14.4 | 6.68 | 3.1 | 370 | 36.05 | 19.81 | 2.87 | 27.59 |
| L2 | H | 6a | 24.2 | 16.1 | 6.67 | 3.2 | 360 | 39.67 | 20.83 | 2.79 | 28.51 |
| | | 6b | nd | 16.7 | 6.70 | 3.2 | 367 | 40.67 | 20.15 | 2.82 | 27.87 |
| L2 | H | 8a | 23.0 | 16.5 | 6.64 | 3.2 | 383 | 42.81 | 20.01 | 2.85 | 27.77 |
| | | 8b | 23.0 | 15.2 | 6.68 | 3.2 | 358 | 45.14 | 18.95 | 2.89 | 26.76 |
| L2 | C | 10a | 20.3 | 14.6 | 6.75 | 3.4 | 425 | 39.78 | 19.95 | 3.04 | nd |
| | | 10b | 20.3 | 15.0 | 6.76 | 3.4 | 428 | 39.32 | 19.92 | 3.05 | nd |
| L2 | C | 12a | 22.6 | 17.6 | 6.75 | 3.5 | 432 | 43.46 | 20.61 | 2.99 | 28.55 |
| | | 12b | 22.6 | 17.6 | 6.77 | 3.5 | 420 | 39.15 | 21.89 | 2.95 | 29.77 |
| | | average | 22.0 ^A | 15.6 ^A | 6.71 ^A | 3.3 ^A | 388 ^A | 39.66 ^B | 20.24 ^B | 2.90 ^B | 28.08 ^B |
| | | SD | 1.3 | 1.3 | 0.04 | 0.1 | 30 | 3.02 | 0.71 | 0.09 | 0.79 |

¹milk from farms recognized for low (L1) or high (L2) content of butyric clostridia spores.

²climate of the period when the cheesemaking was carried out: warm (W), cool (C)

^{A,B} average values in column with different capital letters are different ($P < 0.05$)