**TABLE S1** Cheese-making ingredients used for the manufacturing of control and experimental (RC, RCX, RCC, RCE1, RCE2, RCE1-2, RCXE1, RCCE1) Burrata cheeses.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Whole Milk | Semi-skimmed milk | Semi-skimmed milk inoculated with the starter E1*a* | Cream | Reduced-fat cream | Reduced-fat cream inoculated with starter E2*b* | Reduced-fat cream  diluted with xanthan | Reduced-fat cream  diluted with carrageenan |
| **Control** | x |  |  | x |  |  |  |  |
| **RC** |  | x |  |  | x |  |  |  |
| **RCX** |  | x |  |  |  |  | x |  |
| **RCC** |  | x |  |  |  |  |  | x |
| **RCE1** |  |  | x |  | x |  |  |  |
| **RCE2** |  | x |  |  |  | x |  |  |
| **RCE1-2** |  |  | x |  |  | x |  |  |
| **RCXE1** |  |  | x |  |  |  | x |  |
| **RCCE1** |  |  | x |  |  |  |  | x |

*a*Semi-skimmed milk directly inoculated (6% wt/vol) with the exopolysaccharide producing starter E1(*Streptococcus thermophilus*).  
*b*Reduced-fat cream directly inoculated (3% wt/vol) with the exopolysaccharide producing starter E2 (*Lactococcus lactis* subsp. *lactis* and *Lactococcus lactis* subsp. *cremoris*).

**TABLE S2** Average scores (from 1, lowest, to 5, highest) of sensory attributes resulting from the panel tests carried out on control and experimental (RC, RCX, RCC, RCE1, RCE2, RCE1-2, RCXE1, RCCE1) Burrata cheeses*a* after 1 (T1), 8 (T8) and 16 (T16) days of storage at 4 °C.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Burrata cheese variant | Governing liquid transparency | Color | Surface appearance | Sliminess | Elasticity | Fermented  milk odor | Cream  milk odor | Salty taste | Acid taste | Bitter taste | Sweet taste | Cream milk taste | Aftertaste |
| **T1** | **Control** | 2.1 | 4.4 | 3.8 | 1.8 | 3.6 | 1.4 | 2.6 | 3.9 | 2.0 | 1.0 | 2.8 | 3.4 | 3.8 |
| **RC** | 2.2 | 3.3 | 4.5 | 1.3 | 2.2 | 1.3 | 2.3 | 3.2 | 1.3 | 1.0 | 3.2 | 3.3 | 3.5 |
| **RCX** | 2.2 | 3.7 | 3.2 | 1.8 | 2.0 | 1.8 | 3.7 | 3.2 | 3.0 | 1.2 | 2.8 | 3.0 | 3.5 |
| **RCC** | 2.0 | 3.5 | 3.2 | 1.3 | 2.8 | 2.0 | 3.7 | 2.8 | 2.3 | 1.2 | 3.3 | 3.5 | 2.8 |
| **RCE1** | 1.7 | 3.7 | 3.8 | 1.8 | 2.8 | 1.7 | 3.0 | 3.2 | 1.3 | 1.0 | 3.3 | 4.0 | 3.3 |
| **RCE2** | 3.7 | 3.8 | 3.2 | 1.8 | 2.3 | 2.3 | 3.5 | 3.0 | 2.7 | 1.2 | 3.0 | 3.3 | 3.3 |
| **RCE1-2** | 3.2 | 3.7 | 4.8 | 1.3 | 2.3 | 1.0 | 2.0 | 3.5 | 1.2 | 1.0 | 3.7 | 4.0 | 3.8 |
| **RCXE1** | 3.3 | 3.3 | 3.8 | 2.2 | 3.5 | 1.3 | 3.2 | 2.8 | 1.7 | 1.0 | 3.2 | 4.0 | 3.7 |
| **RCCE1** | 3.2 | 3.8 | 4.5 | 1.2 | 3.8 | 1.5 | 3.2 | 2.7 | 1.8 | 1.0 | 3.5 | 3.5 | 3.2 |
| **T8** | **Control** | 2.2 | 4.0 | 4.3 | 2.5 | 3.8 | 1.3 | 3.5 | 2.7 | 1.7 | 1.2 | 3.7 | 3.5 | 2.7 |
| **RC** | 2.2 | 3.3 | 3.8 | 2.0 | 3.7 | 1.5 | 2.3 | 3.0 | 1.3 | 1.2 | 3.5 | 3.5 | 3.7 |
| **RCX** | 2.8 | 3.8 | 3.2 | 2.3 | 3.5 | 2.3 | 3.5 | 2.5 | 2.8 | 1.5 | 3.0 | 3.3 | 3.5 |
| **RCC** | 2.7 | 3.7 | 3.2 | 2.2 | 3.3 | 2.2 | 3.0 | 2.5 | 2.8 | 1.3 | 3.2 | 3.0 | 3.3 |
| **RCE1** | 1.7 | 2.7 | 3.8 | 2.3 | 2.7 | 1.7 | 2.8 | 3.0 | 1.5 | 1.2 | 4.3 | 4.2 | 3.7 |
| **RCE2** | 3.3 | 3.3 | 3.0 | 2.7 | 2.2 | 2.0 | 3.5 | 2.8 | 2.8 | 1.2 | 3.5 | 3.7 | 4.2 |
| **RCE1-2** | 3.3 | 3.0 | 3.8 | 2.2 | 3.2 | 1.8 | 3.3 | 3.2 | 1.0 | 1.0 | 4.0 | 4.2 | 3.7 |
| **RCXE1** | 3.8 | 3.7 | 3.8 | 2.5 | 3.5 | 1.3 | 2.7 | 2.5 | 1.7 | 1.0 | 4.0 | 3.7 | 3.3 |
| **RCCE1** | 3.8 | 3.3 | 4.7 | 2.3 | 4.2 | 1.3 | 3.2 | 2.8 | 1.5 | 1.0 | 3.5 | 3.8 | 3.7 |
| **T16** | **Control** | 1.8 | 4.0 | 3.0 | 3.0 | 3.5 | 1.2 | 2.3 | 2.5 | 1.8 | 1.0 | 4.0 | 2.8 | 2.3 |
| **RC** | 2.0 | 3.2 | 3.0 | 2.7 | 2.5 | 2.0 | 2.0 | 2.7 | 2.0 | 1.2 | 3.5 | 3.3 | 4.0 |
| **RCX** | 2.8 | 3.3 | 2.3 | 2.2 | 2.3 | 2.2 | 2.3 | 2.3 | 2.8 | 2.2 | 3.0 | 3.0 | 3.6 |
| **RCC** | 2.2 | 2.7 | 2.3 | 2.3 | 3.3 | 2.2 | 3.0 | 1.8 | 2.8 | 2.2 | 3.0 | 2.7 | 3.7 |
| **RCE1** | 1.5 | 3.0 | 2.7 | 2.3 | 2.3 | 1.7 | 2.5 | 2.7 | 1.7 | 1.3 | 3.3 | 3.5 | 3.5 |
| **RCE2** | 3.5 | 3.7 | 3.3 | 3.2 | 3.5 | 2.2 | 2.8 | 2.0 | 3.7 | 1.8 | 2.7 | 2.7 | 3.8 |
| **RCE1-2** | 3.8 | 3.7 | 3.2 | 2.7 | 3.3 | 1.8 | 2.5 | 2.7 | 1.3 | 1.0 | 3.7 | 3.7 | 3.5 |
| **RCXE1** | 4.0 | 3.5 | 3.3 | 2.5 | 3.5 | 1.7 | 2.7 | 2.3 | 1.3 | 1.3 | 3.3 | 3.5 | 3.3 |
| **RCCE1** | 2.8 | 3.5 | 3.7 | 2.2 | 3.3 | 1.7 | 2.5 | 2.7 | 1.3 | 1.0 | 3.3 | 3.3 | 3.3 |

*a*Control, cheese made from whole milk and cream; RC, cheese made from semi-skimmed milk and skimmed cream; RCX, cheese made from semi-skimmed milk and reduced-fat cream diluted with xanthan; RCC, cheese made from semi-skimmed milk and reduced-fat cream diluted with carrageenan; RCE1, cheese made from semi-skimmed milk added with exopolysaccharide producing starter E1 and reduced-fat cream; RCE2, cheese made from semi-skimmed milk, reduced-fat cream added with exopolysaccharide producing starter E2; RCE1-2, cheese made from semi-skimmed milk and reduced-fat cream both added with E1 and E2; RCXE1, cheese made from semi-skimmed milk added with E1 and reduced-fat cream diluted with xanthan; RCCE1, cheese made from semi-skimmed milk added with E1 and reduced-fat cream diluted with carrageenan.

**TABLE S3** Relative abundance (%)*a* of bacterial species found through 16S metagenetic analysis of DNA extracted after 1 (T1) and 16 (T16) days of storage at 4 °C, in the experimental Burrata cheeses*b*.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **T1** | | | | **T16** | | | |
| **Phylum/Family** | **Species** | **Control** | **RC** | **RCE1-2** | **RCXE1** | **Control** | **RC** | **RCE1-2** | **RCXE1** |
| Bacteroidetes/ Flavobacteriaceae | *Chryseobacterium* sp. | 0.16a | 0.08b | 0.00c | 0.00c | 0.02c | 0.00c | 0.00c | 0.00c |
|  | *Flavobacterium* sp. | 0.00c | 0.00c | 0.00c | 0.12b | 0.86a | 0.01c | 0.03c | 0.03c |
| Firmicutes/Bacillaceae | *Anoxybacillus* sp. | 0.12c | 0.23b | 1.14a | 0.02d | 0.01d | 0.14c | 0.12c | 0.12c |
| Firmicutes/Listeriaceae | *Brochothrix* sp. | 0.00b | 0.01b | 0.00b | 0.06b | 0.00b | 0.10b | 1.95a | 0.02b |
| Firmicutes/Planococcaceae | *Kurthia gibsonii* | 0.06bc | 0.35a | 0.02c | 0.00c | 0.00c | 0.11b | 0.00c | 0.00c |
| Firmicutes/Staphylococcaceae | *Macrococcus caseolyticus* | 0.08b | 0.13c | 0.03c | 0.00d | 0.02cd | 0.03c | 0.00d | 0.00d |
| Firmicutes/Carnobacteriaceae | *Carnobacterium* sp. | 0.00b | 0.00b | 0.00b | 0.01b | 0.01b | 0.01b | 0.02b | 0.12a |
| Firmicutes/Lactobacillaceae | *Lactobacillus delbrueckii* | 16.67a | 1.33b | 0.87bc | 0.01c | 0.61bc | 0.19c | 0.26c | 0.08c |
| Firmicutes/Leuconostocaceae | *Leuconostoc lactis* | 0.48c | 10.49a | 0.01c | 1.29c | 0.33c | 4.77b | 0.03c | 0.11c |
|  | *Leuconostoc mesenteroides* | 0.02b | 0.03b | 0.01b | 6.15a | 0.02b | 0.14b | 0.12b | 0.11b |
| Firmicutes/Streptococcaceae | *Lactococcus lactis* | 3.63d | 10.77a | 8.11b | 0.33e | 2.95d | 3.47d | 6.19c | 0.12e |
|  | *Lactococcus* sp. | 0.12e | 3.08de | 0.05e | 6.89d | 0.09e | 57.12a | 14.15c | 34.06b |
|  | *Streptococcus lutetiensis* | 23.95a | 3.88b | 0.26e | 0.02e | 1.69c | 1.06d | 0.05e | 0.03e |
|  | *Streptococcus macedonicus* | 0.24a | 0.07b | 0.05b | 0.00b | 0.03b | 0.01b | 0.00b | 0.00b |
|  | *Streptococcus parauberis* | 0.10a | 0.10a | 0.03bc | 0.01bc | 0.04b | 0.03bc | 0.00c | 0.02bc |
|  | *Streptococcus thermophilus* | 51.76c | 65.04b | 88.31c | 3.23f | 49.76c | 17.08d | 7.88e | 5.91ef |
|  | *Streptococcus* sp. | 0.87b | 1.54a | 0.46cd | 0.24de | 0.10e | 0.60bc | 0.10e | 0.07e |
| Firmicutes/Others | Bacilli\_others | 0.02de | 0.03de | 0.03de | 36.53a | 0.02d | 5.42b | 0.93c | 0.78cd |
| Proteobacteria/Oxalobacteraceae | *Janthinobacterium* sp. | 0.00c | 0.00c | 0.00c | 0.03bc | 0.00c | 0.07b | 0.07b | 1.50a |
| Proteobacteria/Aeromonadaceae | *Aeromonas* sp. | 0.09b | 0.07b | 0.01b | 0.03b | 0.01b | 0.03b | 9.60a | 0.57b |
| Proteobacteria/Psychromonadaceae | *Psychromonas arctica* | 0.00b | 0.00b | 0.00b | 0.00b | 0.00b | 0.11a | 0.01b | 0.00b |
| Proteobacteria/Shewanellaceae | *Shewanella baltica* | 0.00c | 0.00c | 0.00c | 0.11c | 0.00c | 0.15bc | 1.19b | 1.73a |
|  | *Shewanella* sp. | 0.00c | 0.00c | 0.00c | 0.00c | 0.00c | 0.02c | 0.29b | 0.39a |
| Proteobacteria/Enterobacteriaceae | *Buttiauxella agrestis* | 0.01e | 0.01e | 0.00e | 2.37b | 0.01e | 0.65d | 1.75c | 5.45a |
|  | *Enterobacter* sp. | 0.55a | 0.28b | 0.06d | 0.08cd | 0.05d | 0.04d | 0.05d | 0.19bc |
|  | *Escherichia coli* | 0.08a | 0.06ab | 0.01bc | 0.00c | 0.03abc | 0.00c | 0.01c | 0.00c |
|  | *Enterobacteriaceae* | 0.00e | 0.00de | 0.00e | 0.34a | 0.01de | 0.04de | 0.08c | 0.24b |
| Proteobacteria/Moraxellaceae | *Acinetobacter* sp. | 0.45c | 0.27cd | 0.26cd | 1.52a | 0.06d | 0.08d | 0.46c | 0.99b |
|  | *Moraxella osloensis* | 0.03b | 1.70a | 0.01b | 0.00b | 0.00b | 0.06b | 0.00b | 0.00b |
| Proteobacteria/Pseudomonadaceae | *Pseudomonas* sp. | 0.18f | 0.22f | 0.02f | 39.75d | 43.09c | 7.93e | 53.87a | 46.13b |

*a*Within the same row, values sharing one or more superscript letters are not significantly (P > 0.05) different. Only OTUs with a relative abundance > 0.1% in at least one thesis are shown.

*b* Control, cheese made from whole milk and cream; RC, cheese made from semi-skimmed milk and reduced-fat cream; RCE1-2, cheese made from semi-skimmed milk and reduced-fat cream both added with E1 and E2; RCXE1, cheese made from semi-skimmed milk added with E1 and reduced-fat cream diluted with xanthan.