

**Ranucci *et al***

**Seasonal Variations of Italian Mediterranean Buffalo (*Bubalus bubalis*) Mozzarella Cheese**

**Quality**

**Supplementary File**

**Table S1.** Distribution of births and milk production along the year.

<b>Month</b>	<b>Births (number)</b>	<b>Milk (kg)</b>
January	25	47,419
February	33	39,304
March	25	42,446
April	29	46,029
May	48	58,748
June	33	65,661
July	31	72,567
August	22	72,267
September	6	62,992
October	5	55,695
November	19	47,746
December	13	43,246

**Table S2.** Somatic cell count, fat, protein and lactose content in water buffalo milk produced in winter and summer (n = 12, mean value  $\pm$  standard deviation).

	<b>Winter</b>	<b>Summer</b>	<b>P value</b>
<b>Somatic cell count (cells/ml)</b>	88272.73 $\pm$ 38742.33	125156.00 $\pm$ 38254.29	<0.05
<b>Fat (%)</b>	8.49 $\pm$ 0.326	7.63 $\pm$ 0.102	<0.001
<b>Protein (%)</b>	4.81 $\pm$ 0.078	4.54 $\pm$ 0.125	<0.001
<b>Lactose (%)</b>	4.67 $\pm$ 0.158	4.70 $\pm$ 0.082	n.s.

n.s.=not significant

**Table S3.** Fatty acid profile (% of total FA) of water buffalo mozzarella cheese produced in winter and summer (n = 20; mean value  $\pm$  standard deviation).

Fatty acid (%)	Winter	Summer	P value
<b>C 4:0</b>	1.13 $\pm$ 0.18	1.12 $\pm$ 0.10	n.s.
<b>C 6:0</b>	0.66 $\pm$ 0.06	0.67 $\pm$ 0.05	n.s.
<b>C 8:0</b>	0.43 $\pm$ 0.03	0.45 $\pm$ 0.02	n.s.
<b>C 10:0</b>	1.06 $\pm$ 0.05	1.13 $\pm$ 0.04	<0.05
<b>C 12:0</b>	1.72 $\pm$ 0.08	1.83 $\pm$ 0.06	<0.05
<b>C 14:0</b>	9.35 $\pm$ 0.57	9.68 $\pm$ 0.18	n.s.
<b>C 15:0</b>	0.97 $\pm$ 0.03	1.00 $\pm$ 0.01	<0.01
<b>C 16:0</b>	35.48 $\pm$ 1.46	36.35 $\pm$ 0.74	n.s.
<b>C 17:0</b>	0.52 $\pm$ 0.02	0.56 $\pm$ 0.02	<0.01
<b>C 18:0</b>	15.35 $\pm$ 0.42	15.35 $\pm$ 0.55	n.s.
<b>C 21:0</b>	0.06 $\pm$ 0.03	0.04 $\pm$ 0.02	n.s.
<b>SFA</b>	66.75 $\pm$ 1.93	68.18 $\pm$ 0.65	n.s.
<b>C 14:1</b>	0.78 $\pm$ 0.01	0.73 $\pm$ 0.03	<0.01
<b>C 15:1</b>	0.38 $\pm$ 0.02	0.38 $\pm$ 0.02	n.s.
<b>C 16:1</b>	1.76 $\pm$ 0.02	1.55 $\pm$ 0.08	<0.001
<b>C 17:1</b>	0.17 $\pm$ 0.01	0.18 $\pm$ 0.01	<0.05
<b>C 18:1 n9t</b>	0.31 $\pm$ 0.04	0.27 $\pm$ 0.01	<0.05
<b>C 18:1 n7t</b>	1.61 $\pm$ 0.15	1.45 $\pm$ 0.06	<0.05
<b>C 18:1 n9c</b>	23.85 $\pm$ 1.58	22.91 $\pm$ 0.37	n.s.
<b>C 18:1 n7c</b>	0.73 $\pm$ 0.03	0.70 $\pm$ 0.01	<0.05
<b>C 20:1 n9</b>	0.30 $\pm$ 0.02	0.31 $\pm$ 0.01	n.s.
<b>C 22:1 n9</b>	0.13 $\pm$ 0.01	0.13 $\pm$ 0.01	n.s.
<b>MUFA</b>	29.78 $\pm$ 1.77	28.37 $\pm$ 0.32	n.s.
<b>C 18:2 n6t</b>	0.24 $\pm$ 0.02	0.18 $\pm$ 0.01	<0.001
<b>C 18:2 n6c</b>	1.88 $\pm$ 0.08	1.94 $\pm$ 0.20	n.s.
<b>C 18:3 n6</b>	0.03 $\pm$ 0.01	0.04 $\pm$ 0.01	n.s.
<b>C 18:3 n3</b>	0.27 $\pm$ 0.02	0.26 $\pm$ 0.04	n.s.
<b>C18:2 C9 t11 (CLA)</b>	0.85 $\pm$ 0.05	0.80 $\pm$ 0.02	n.s.
<b>C 20:3 n3</b>	0.09 $\pm$ 0.01	0.08 $\pm$ 0.04	n.s.
<b>C 20:5 n3</b>	0.02 $\pm$ 0.01	0.04 $\pm$ 0.01	n.s.
<b>C 22:2</b>	0.06 $\pm$ 0.01	0.07 $\pm$ 0.02	n.s.
<b>PUFA</b>	3.46 $\pm$ 0.16	3.42 $\pm$ 0.26	n.s.
<b>n-3</b>	0.38 $\pm$ 0.02	0.39 $\pm$ 0.06	n.s.
<b>n-6</b>	2.15 $\pm$ 0.11	2.16 $\pm$ 0.21	n.s.
<b>PUFA/SFA</b>	0.05 $\pm$ 0.01	0.05 $\pm$ 0.01	n.s.
<b>n-6/n-3</b>	5.66 $\pm$ 0.16	5.53 $\pm$ 0.77	n.s.

n.s.=not significant; CLA= Coniugated Linolenic Acids

**Table S4.** Results of the descriptive sensory profile performed on water buffalo mozzarella cheese produced in winter and summer (n = 16; 10 assessors; mean value  $\pm$  standard deviation).

Attributes	Winter	Summer	P value*		
			Season	Replicate	SxR
<b>Color homogeneity</b>	8.08 $\pm$ 0.54	8.07 $\pm$ 0.50	n.s.	n.s.	n.s.
<b>White</b>	7.74 $\pm$ 0.52	8.42 $\pm$ 0.31	<0.01	n.s.	n.s.
<b>Translucent</b>	8.17 $\pm$ 0.25	6.22 $\pm$ 1.01	<0.001	n.s.	n.s.
<b>Whey odour</b>	6.81 $\pm$ 0.76	3.92 $\pm$ 0.90	<0.001	n.s.	n.s.
<b>Milk odour</b>	5.68 $\pm$ 0.84	3.57 $\pm$ 0.29	<0.001	n.s.	n.s.
<b>Butter odour</b>	5.30 $\pm$ 0.60	3.68 $\pm$ 0.37	<0.001	n.s.	n.s.
<b>Elastic</b>	5.09 $\pm$ 0.40	3.71 $\pm$ 0.77	<0.001	n.s.	n.s.
<b>Juicy</b>	6.83 $\pm$ 0.67	2.89 $\pm$ 0.68	<0.001	n.s.	n.s.
<b>Acid</b>	6.12 $\pm$ 0.53	3.94 $\pm$ 1.16	<0.001	n.s.	n.s.
<b>Bitter</b>	0.76 $\pm$ 0.44	2.64 $\pm$ 0.70	<0.001	n.s.	n.s.
<b>Salty</b>	4.54 $\pm$ 0.66	4.21 $\pm$ 0.68	n.s.	n.s.	n.s.
<b>Astringent</b>	0.51 $\pm$ 0.48	1.69 $\pm$ 0.29	<0.001	n.s.	n.s.

n.s.=not significant

**Figure S1.** Total viable count (TVC) and Lactic Acid Bacteria count (LAB) in water buffalo milk produced in winter and summer (n = 20, Log Colony Forming Unit g<sup>-1</sup>)

