62nd Annual Meeting EAAP 2011
August 29th – September 2nd
Stavanger NORWAY

Session 44 – Abstract: 10368

The fatty acid composition and amino acid profile of organic buffalo milk

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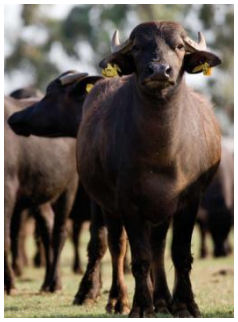
Background

	Cow milk	Buffalo milk
World milk production, %	84	12

	Cattle	Buffalo
Lactation days	305-350	217-270
Daily milk production, kg	5-30	3.7-7.2
Fat, %	4	7-8
Protein,%	3.5	4.2-4.5

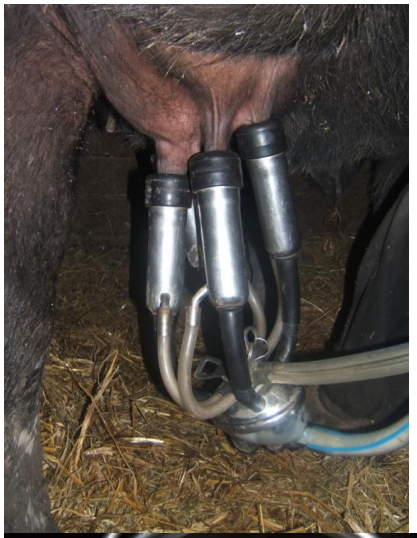


In Hungary

- The buffalo population in Hungary is very small (appr. 1000 head)
- There is only one dairy buffalo herd
- Milk sold on organic market
- No data available about properties of milk

The aim of paper

- To investigate fatty acid composition and amino acid profile of organic Hungarian buffalo milk.



Materials and methods

The samples were collected from organical farm
Buffalo cows (n=40) spend grazing period outdoors
Sampling from evening milking
Chemical analysis, amino and fatty acid profile determination at Kaposvár University
Data processing was made by SPSS 10.0.

Results

Milking parameters

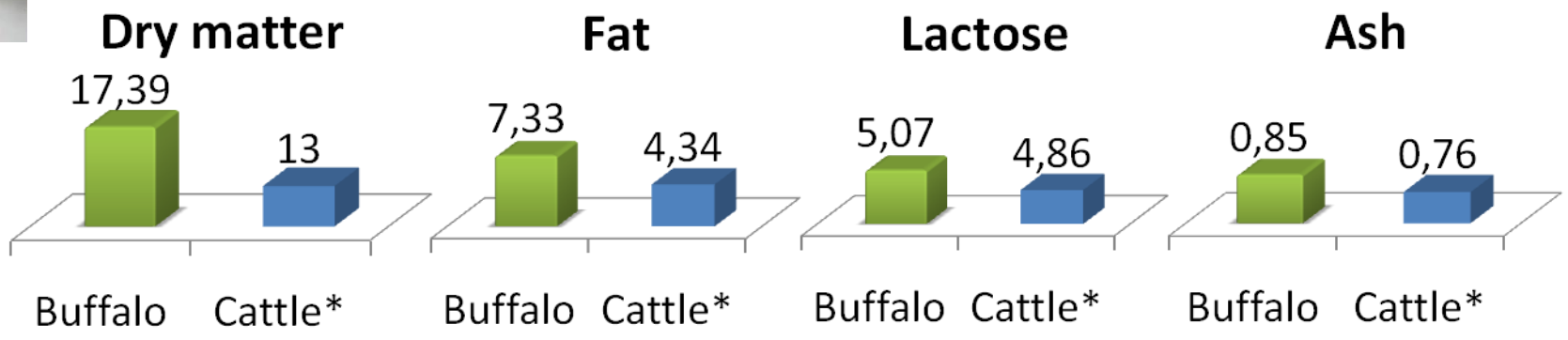
	Mean$_{SD}$
Duration of milking, min	7.71 $_{2.05}$
Daily milk yield, kg	6.00$_{0.62}$
Milking speed, kg/min	0.41$_{0.13}$

Milk protein content and composition

	Mean$_{SD}$
Total protein **g/100 g**	**4.19**$_{0.31}$
Real protein **g/100 g**	**3.92**$_{0.30}$
Whey protein **g/100 g**	**0.87**$_{0.10}$
Real whey protein **g/100 g**	**0.60**$_{0.10}$
Casein **g/100 g**	**3.33**$_{0.24}$
Whey protein % in total protein fraction	**79.38**$_{1.47}$
Casein % in total protein fraction	**20.62**$_{3.11}$

Results

Milk composition, %



*based on Hungarian data

Fatty acid composition, %

	SFA	MUFA	PUFA	n-6	n-3	CLA	n-6/n3	P/S
Mean	62.37	33.88	3.75	1.51	1.19	1.04	1.27	0.06
SD	3.80	3.87	0.34	0.09	0.12	0.21	0.07	0.01

Amino acid composition, g/100g protein

	EAA	Arg	His	Isoleu	Leu	Lys	Meth	Phe	Thr	Val	NEAA	Ala	Asp	Cys	Glut	Gly	Pro	Ser	Tyr
Mean	44.08	2.6	2.46	4.9	8.54	7.32	4	4.32	4.16	5.78	54.3	2.9	7.14	0.7	22.3	1.74	10.2	5.4	3.96
SD	0.18	0.0	0.05	0.07	0.05	0.04	0.00	0.04	0.15	0.04	0.24	0.07	0.17	0.10	0.09	0.05	0,19	0,12	0,09

Conclusion

- Organic buffalo milk a valuable nutrient with high content of milk proteins.
- *The milk of buffalo is very good for cheese making, because the proportion of casein fraction (79.4) is high inside the whole protein content.*
- Organic buffalo milk rich in *n*-3 fatty acids and conjugated linoleic acid.