

R. PONKA¹ *, E. BEAUCHER², E. FOKOU³, G. KANSKI³, M. PIOT², J. LEONIL² & F. GAUCHERON²

¹ Department of Agriculture, Livestock and By-Products, The Higher Institute of the Sahel, University of Maroua, PO BOX 46, Maroua, Cameroon; ² UMR 1253 Science et Technologie du Lait et de l'Œuf, Inra-Agrocampus Rennes, 65 rue de Saint-Brieuc, 35042 Rennes Cedex, France; ³ Department of Biochemistry, Faculty of Science, University of Yaoundé I, PO BOX 812 Yaoundé, Cameroon

* : Corresponding author : rponka@yahoo.fr

INTRODUCTION

Milk and milk products are excellent high quality foods, providing nutritional values. They have an important place in the human diet. The production of cow milk in the Far North Region of Cameroon is 41 760 tonnes/year. A large part of this milk is transformed into artisanal yoghurt by different Common Initiative Groups settled in the area. In Cameroon, several studies have been carried out on the composition of foods and dishes, but the composition of milk and dairy products has received little attention.

The objective of this study was to determine the mineral composition of artisanal yoghurts collected in Maroua (Cameroon) a town in the Far North Region of Cameroon.

MATERIALS AND METHODS



Milking operation



Fresh cow milk



artisanal yogurt samples

Artisanal yoghurt samples were collected from 12 producers in the city of Maroua and labelled YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK and YL. For the manufacture of yoghurt, each producer used as ingredients a mixture of raw cow milk obtained from farmers of Maroua city, industrial yoghurt as a starter source, water and sugar in different proportions. Mineral content (calcium, magnesium, sodium, potassium, phosphorus, iron, zinc and copper) were determined by atomic absorption spectrometer. Analysis of variance was performed to compare the levels of minerals in the sample.

RESULTS

Mineral composition of artisanal yoghurts (mg/Kg)

Sample	Ca	Mg	Na	K	P	Fe	Zn	Cu
YA	1005±5.12 ^f	96±0.32 ^e	294±0.76 ^e	1383±0.63 ^f	766±1.46 ^d	0.55±0.04 ^b	3.09±0.04 ^{cde}	0.14±0.05 ^{ab}
YB	1129±0.37 ^d	109±1.34 ^d	319±0.32 ^c	1528±2.31 ^b	815±5.12 ^c	0.51±0.01 ^{bc}	3.97±0.08 ^b	0.06±0.01 ^{bcd}
YC	719±3.65 ^f	81±0.24 ^g	282±1.60 ^f	1109±0.14 ^k	683±5.10 ^f	0.98±0.04 ^a	2.96±0.28 ^{de}	0.07±0.03 ^{bcd}
YD	697±3.01 ^k	74±0.45 ^h	207±0.03 ⁱ	991±3.83 ^l	635±3.69 ^g	0.37±0.04 ^{cd}	2.48±0.10 ^f	0.12±0.00 ^{abc}
YE	798±8.24 ⁱ	80±0.08 ^g	216±0.54 ^h	1140±3.64 ^j	639±3.37 ^g	0.52±0.10 ^{bc}	2.81±0.01 ^{ef}	0.04±0.01 ^{cd}
YF	1080±3.97 ^e	110±0.17 ^d	329±0.30 ^b	1406±5.01 ^e	755±0.00 ^d	0.50±0.08 ^{bc}	3.98±0.01 ^b	0.09±0.06 ^{abcd}
YG	1158±6.40 ^c	125±1.16 ^b	326±7.04 ^{bc}	1351±2.29 ^g	816±8.37 ^c	0.57±0.01 ^b	4.41±0.24 ^a	0.05±0.01 ^{bcd}
YH	1005±2.34 ^f	108±0.91 ^d	304±4.82 ^d	1207±7.27 ⁱ	714±6.07 ^e	0.54±0.02 ^b	3.45±0.04 ^c	0.02±0.00 ^d
YI	972±6.61 ^g	106±0.57 ^e	288±2.07 ^{ef}	1472±0.01 ^d	756±0.00 ^d	0.48±0.00 ^{bc}	3.31±0.07 ^{cd}	0.06±0.01 ^{bcd}
YJ	872±1.36 ^h	91±1.36 ^f	251±0.62 ^g	1253±7.20 ^h	713±4.36 ^e	0.24±0.04 ^d	3.03±0.07 ^{df}	0.05±0.02 ^{bcd}
YK	1249±7.53 ^a	119±0.77 ^c	350±0.19 ^a	1487±3.82 ^c	855±3.94 ^b	0.52±0.10 ^{bc}	4.44±0.01 ^a	0.05±0.03 ^{bcd}
YL	1209±0.64 ^b	135±0.50 ^a	350±0.97 ^a	1808±1.70 ^a	916±24.26 ^a	0.57±0.01 ^b	4.32±0.20 ^{ab}	0.16±0.07 ^a
Mean	991±180.98	103±18.33	293±49.39	1345±215.509	755±83.10	0.53±0.17	3.52±0.66	0.07±0.05

Mean values in the same column with different superscript letters are significantly different ($P < 0.05$)

CONCLUSION

The mineral composition of artisanal yoghurts consumed in Maroua (Cameroon) varied from one sample to another. The result of this study would be helpful for food scientists, nutritionists and public health workers interested in nutritive values of local foods.

ACKNOWLEDGEMENT The authors thank the French Cooperation for the financial support provided for this study.