Effect of the season on the fatty acid composition of Lipids in camel milk

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INTRODUCTION

In order to have high variability in the composition of fatty acids, healthy animals were randomly selected from southern Kazakhstan. During 4 different seasons, 23 samples of milk were collected. Milk was collected during milking and at the end of milking. It was stored in icebox until lab, then frozen at -20°C until analysis.

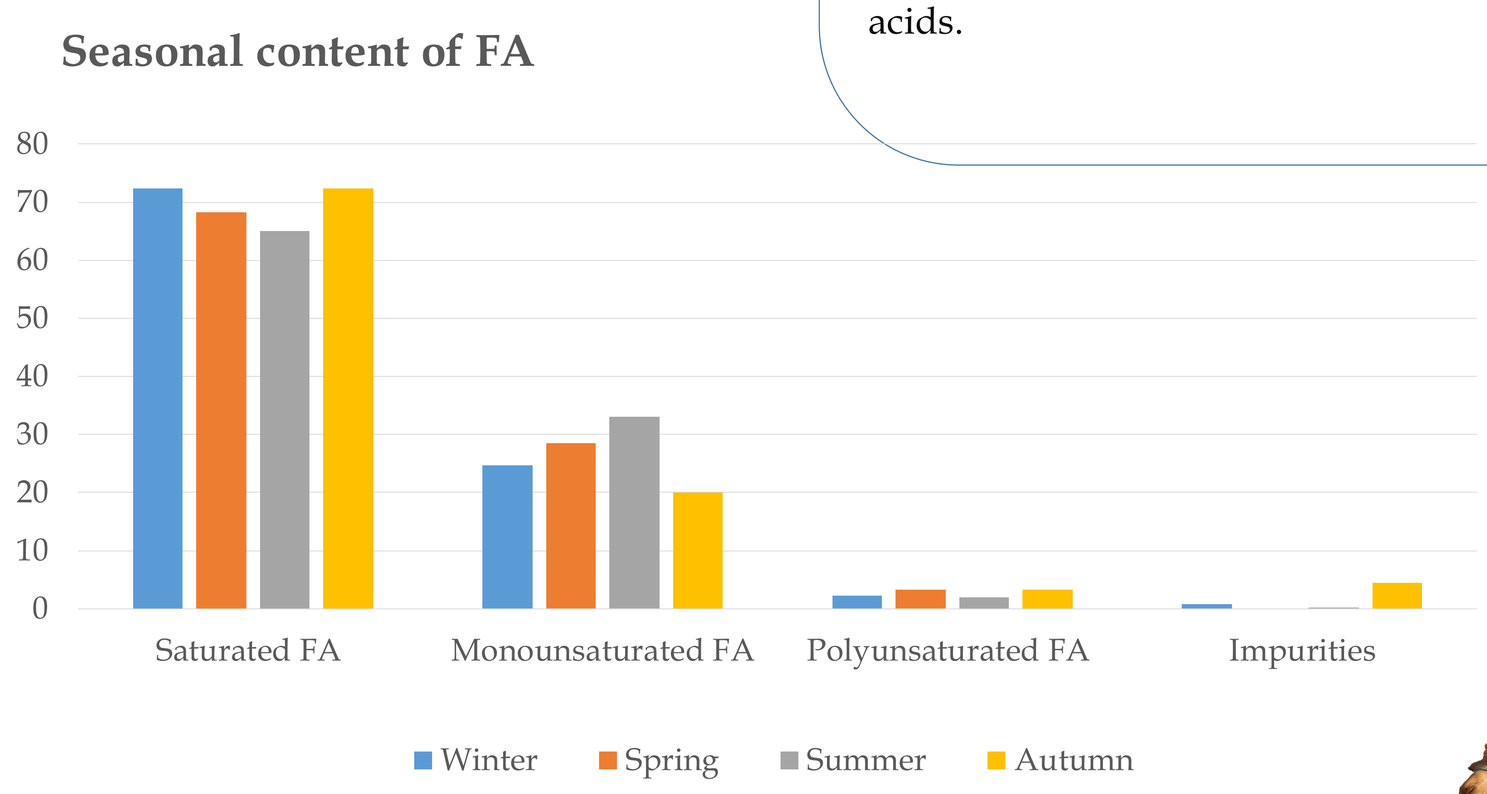
Key words. Camel milk, fatty acids, lipids, season, monounsaturated fatty acids, polyunsaturated fatty acids

METHODS

Gas chromatography of lipids of the camel milk were carried out on the device Carlo Erba instrument, model GC 8000 Top (Erba Science). In this paper, we used capillary column SUPELCOWAX length of 30 mm and a width of 0.32 mm and a flame ionizing detector (manufacturer: SUPELCO, Bellefonte, USA). As the carrier gas, helium was used. Have been chosen the optimal transmission rate for chromatography of lipids of camel milk - 2 ml/min.

RESULTS

The composition of fatty acids in camel milk depends on the season. Observed fluctuations for certain fatty acids, was influenced by season. During the year the content of saturated fatty acids varies greatly. Content in caprylic acid during spring season (C8) 2 times higher than in winter. Content in capric acid (C10) in winter and spring increased by 23.2% and 25.6 %, respectively, decreased by 4.8% in the summer and increased in autumn 7.8 % ($P \leq 0,05$). Summer milk samples was rich in palmitic acid (C16) 29.0%. Autumn milk samples were characterized by high concentration of saturated fatty acids, due to the presence of myristic (16.6 %) and stearic acid (23.5 %) ($p \leq 0,05$). Spring, summer and winter samples of camel milk fat contain "useful" combination of fatty acids.



CONCLUSION

Camel milk fats has nutritional properties, is a source of energy for the biochemical processes in the living organism, easily accessible and has different valuable nutritional properties compared to other dairy fats. Low molecular weight volatile fatty acids (C4 - C10) of fresh dairy fat determine its odor acid with a chain of 12 or more carbon atoms and is practically odorless and tasteless.

Physiological value-fat milk and dairy products camels is due to saturated (C10 - C14) and essential fatty acids (C18: 2 (ω-6), C18: 3 and C20: 1). As it is known, the lack of polyunsaturated fatty acids in an organism provokes various diseases. Besides pleasant taste of camel milk fat milk and its derivatives ennobling, causes homogeneity and ductility of the structure and consistency of the fatty acids.

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