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THE PHYSICOCHEMICAL CHARACTERISTICS AND MICROBIOLOGIC OF GREEN EWE CHEESE FROM FARMS FROM BIHOR

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Abstract

Sheep's milk can affect the consumer's health on some occasions regardless of its significant nutritional and biological qualities.

The main objective in obtaining a high quality, hygienic, and wholesome milk consists of the taking of all measures to prevent the penetration of microbes in the milk from the milking stage to the consumer, as well as from preventing the development of microbes that eventually have infiltrated the milk (Man, 1996). The rules concerning the milk hygiene must be satisfied, therefore, from the milking process until its final delivery to the consumer.

Key words: brânză telemea de oaie, examen bacteriologic, examen fizico-chimic

INTRODUCTION

Through the study we aimed the way that meet certain hygiene measures, ranging from milk and harvesting until the consummation of his samples in. All harvested from public markets and from the peasants of the household contain coliform bacteria, so they are polluted with bacteria for home Enteral nutrition. But keep in mind that 30.83% of of fresh green ewe cheese, samples containing more than 10 coliforms/g, they are not in order with the O.M.S. nr 975/1998. This shows great deficiencies in hygiene, milking and flow technology. It is worth that a large number of unwanted changes in enterobacteria inducing manufacturing process, ripening and conservation of various types of dairy products.

MATERIAL AND METHOD

The determinations were performed on samples of fresh green ewe cheese, the samples being collected from individual producers (sheepfold and public markets).

The fresh green ewe cheese was analyzed from an organoleptic (aspect, consistency, color, smell, taste), chemical (determination of fat using the acid-butyrometric method, with the help of the VAN-GULIK butyrometer or of the milk butyrometer, determination of dry substance,

determination of proteinic substances, determination of Sodium Chloride) and microbiological point of view (determination of the number of Coliform bacteria per 1g of product, presence of Escherichia coli/1 g of product, presence of Salmonella/ 25 g of product, determination of the number of coagulase-positive Staphylococci per 1g of product, determination of the number of yeasts and molds per 1g of product).

Standardized appliances and methods were used for these determinations (ROTARU O şi col., 1994).

RESULTS AND DISCUSSIONS

The results of the organoleptic test of fresh green ewe cheese obtained in sheep exploitations are presented in table 1

Table 1

The organoleptic characteristics of of fresh green ewe cheese

Place of collection	Number of samples	Organoleptically inadequate samples
Farm 1	30	10 – showed pronounced traces of cheesecloth, frail consistency, slightly rubbery; white color on the surface and yellowish on the inside; has a slight taste and smell due to using insufficiently clean pots or a dirty cheesecloth; the brine presents some impurities.
Farm 2	30	23 – had traces of blackened salt on the surface; smell and taste were different from those of sheep's milk; too salty a taste due to excessively seasoning the cheese with salt; the brine contained impurities and a slight moldy odor.
Farm 3	30	15 – were inadequate when it came to their appearance, which showed signs of blackened salt, whereas the brine contained impurities; sour taste due to processing milk with high levels of acidity.
Farm 4	30	18 – had a frail consistency, yellowish color, salty taste due to excessive use of salt and a slight odor due to the use of hygienically inadequate milk containers.
Total samples	120	55 % present quality shortcomings regarding their organoleptic features.

The standard chemical characteristics that both ripened and fresh sheep's milk green ewe cheese must have are presented in table 2.

Table 2

Chemical characteristics of green ewe cheese (OMS nr. 975/1998)

CARACTERISTICA	Sheep's milk green ewe cheese			Stas
	fresh	repened	salty	
GR/SU, % min	45	50	45	6352/2-87
Dry substance, % min	45	50	52	6344-88
Proteinic substances, %, min	16			6355-89
Salt, % max	0,5	0,5	4	6354-84

In table 3 are presanted the chemical charateristics of fresh green ewe cheese taking from farms.

Table 3

Chemical characteristics of fresh green ewe cheese from the sheep exploitations

Place of collection	Nr. de probe	The characteristics properties of green ewe cheese (%)				
		Dry substances	Water	Fat	Salt	Proteinic substances
Farm 1	30	44,5 ± 0,3	55,50 ± 0,3	46,6 ± 0,5	0,39 ± 1,1	18,20 ± 0,1
Farm 2	30	45,2 ± 0,9	54,80 ± 0,9	45,3 ± 0,8	0,68 ± 0,9	15,95 ±0,4
Farm 3	30	44,2 ± 0,5	55,8 ± 0,5	47,2 ± 0,6	0,52 ± 1,2	17,45 ± 0,8
Farm 4	30	46,7 ± 0,7	53,3 ± 0,7	44,8 ± 0,9	0,80 ± 0,7	16,50 ± 1,3

The physicochemical characteristics of the studied dairy products fit within the norms regarding dry substance, fat, proteins, water.

The standard microbiological characteristics that fresh green ewe cheese must have are presented in table 4 (fig. 1).

Tabelul 4

Bacteriological characteristics of fresh green ewe cheese from the sheep exploiatations

Place of collection	Nr. probe	Bacterii coliforme/ 1 g produs	Escherichia coli/1 g produs	Salmonella/ 25 g produs	Stafilococi coagulaza pozitiv/ 1 g produs	Drojdii şi mucegaiuri/ 1 g produs
Farm 1	30	10 p. > 10 20 p. < 10	21 p. abs. 9 p. prez.	abs.	2 p. > 10 28 p. < 10	3p. > 100 27p. < 100
Farm 2	30	8 p. > 10 22 p. < 10	26 p. abs. 4 p. prez.	abs.	6 p. > 10 24 p. < 10	6p. > 100 24p. < 100
Farm 3	30	7 p. > 10 23 p. < 10	25 p. abs. 5 p. prez.	abs.	3 p. > 10 27 p. < 10	5p. > 100 25p. < 100
Farm 4	30	12 p. > 10 18 p. < 10	27 p. abs. 3 p. prez.	abs	5p. > 10 25 p. < 10	9p. > 100 21p. < 100
Total	120	69,17 % adequate samples. 30,83% inadequate samples.	82,5 adequate samples 17,5% inadequate samples	abs.	86,67 % adequate samples 13,33% inadequate samples	80,84 % adequate samples 19,16% inadequate samples

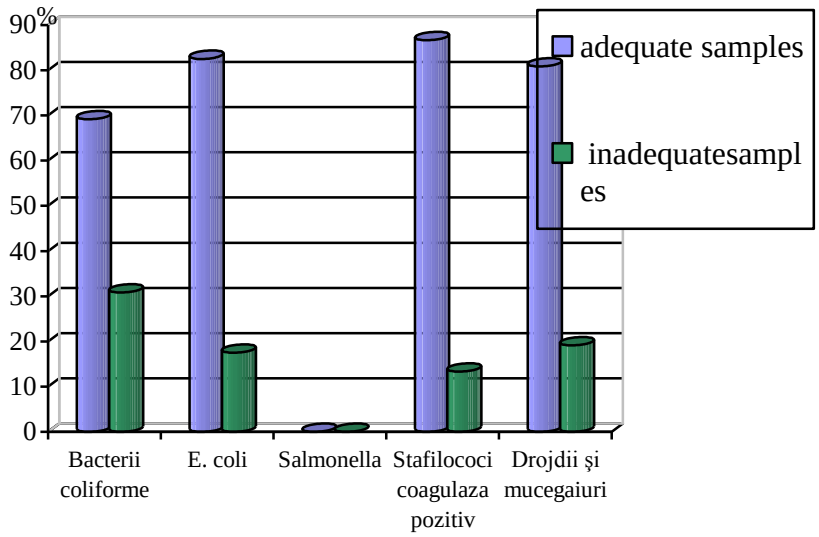

Fig. 1. Graphic representation of the Bacteriological of fresh green ewe cheese

As to the bacteriological characteristics of ripened sheep's milk cottage cheese, out of a total of 120 samples, 69,17% are adequate when it comes to Coliform Bacteria, 82,5% of the samples are adequate regarding Escherichia coli, 86,67% of the samples are adequate for the coagulase-positive staphylococcus, whereas 80.84% of the samples are adequate regarding yeasts and molds. Salmonella was absent in all of the studied samples.

CONCLUSIONS

All the samples collected from cheese dairies, public marketplaces and individual farmers contain Coliform Bacteria, and are therefore polluted with enteric bacteria. But it is important to point out that 30,83% of fresh green ewe cheese contained over 10 Coliform bacteria per gram, thus not complying with the provisions of the O.M.S. no. 975/1998. This fact indicates serious deficiencies regarding the hygiene of the milking process and the technological flux. It is worth mentioning that a high number of enteric bacteria induce unwanted changes in the processes of producing, maturing and preserving of various types of dairy products.

Identification of E. coli. with the help of specific tests, E. coli was identified in too high a number of samples 17,5%. Soiling of the milk used as raw material with animal feces is certain and this fact is hard to

overcome, considering the poor conditions of hygiene in which the manual milking of the sheep is performed in Romanian farms.

The incidence of samples containing over 10 coagulase-positive Staphylococci per one gram of product is of 13,33% in the of fresh green ewe cheese.

Salmonella was not discovered in any of the analyzed samples.

Regarding the presence of yeasts and molds in the samples of analyzed dairy products as stipulated in O.M.S. nr. 975/1998, per 1g of product, the dispositions are exceeded in 19,16% of fresh green ewe cheese. The main causes of this situation are the poor work and hygiene conditions, which are reflected in the dairy products and in their quality.

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