

## COMPARATIVE ANALYZE BETWEEN CHEESES OBTAINED FROM UNPASTEURIZED AND PASTEURIZED MILK

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### Abstract

*On the cheese market there is this time o lot of brine cheeses types. This study aimed to compare sensorial characteristics between two kinds of “Telemea” cheeses, one obtained from un-pasteurized milk and another obtained from pasteurized milk, using the appreciation of the principal sensorial characteristics of each one. This work wants to present comparative studies regarding the principal physical, chemical and sensorial characteristics of different cheese types.*

**Keywords:** *pasteurized milk, un-pasteurized milk, “Telemea” cheese*

### Introduction

In cheese manufacturing the pasteurization is used to destroy the pathogenic bacterium that can have a bad influence into the cheese maturation process (Costin, 2003).

More and more research papers concerning the pasteurize influence about the nutritive value of the products, that should be obtained shows that by raising the pasteurization temperature it is achieved a selection of spore and heat tolerance germ. This germ in general can be degrading the casein, producing milk deterioration (Costin, 1971). In the milk pasteurization negative effects of the temperature variation from the pasteurization process were obtained.

The sensorial properties of cheese are influenced by the milk composition. The fat/protein rapport determines the physic structure of the cheese pastes and its capacity to retain humidity with effects about the proteins firmness and hydrolyze degree. Some components from milk that is fined in small quantities are responsible for volatile products formation that belongs to the flavor substances. The inexpressive taste phenomena in cheese obtained from pasteurized

milk can be explained not only micro-flora destruction and by enzyme inactivity but by chemical alteration of the component substances from cheese (Banu, 1974).

## **Experimental**

In this work paper we try to analyses a two Telemea cheeses type obtained from un-pasteurized and pasteurized milk.

Sampling is making in only one cheeses factory. It was take 12 samples for analyses, 6 samples on Telemea cheese obtained from un-pasteurized milk and 6 samples on Telemea cheese obtained from pasteurized milk.

In the present work it had been followed the idea of sensorial, physic-chemical and microbiological determination on two type of "Telemea Cheese". The Telemea cheese obtained from un-pasteurized milk and Telemea cheese obtained from pasteurized milk, in accordance with the present norms. In Telemea cheese obtained from pasteurized milk case, the milk pasteurized had been realized to 67-68°C, with the maintenance at this temperature for 20 minutes, in holding tub (Pasat, 2003; Dairy Science and Technology, 2003).

The raw milk used as raw matter in the Telemea cheese obtained from un-pasteurized milk obtain had been framed in the norm stipulation regarding this microbiological request.

It had been followed the determination of:

- a) Sensorial characteristics;
- b) Physic-chemical characteristics, acidity (Thorner method), the total dry matter (drying methods), fat contents (Gerber methods), proteins (Khenjdal method), phosphatase test (only for Telemea cheese obtained from un-pasteurized milk) (Walstra, 1983).

## **Results and Discussions**

Results obtained after to analyses a 12 samples indicate more sensorial and physical-chemical property modification.

All the analyses make in laboratory on raw milk and cheeses indicated a little acidity increase at Telemea cheese obtained from

unpasteurized milk, because the microorganism presents in milk is not destroys complete through pasteurization. The humidity of coagulum at Telemea cheese obtained from pasteurized milk is high because is a pasteurization effect (table 1). Is affected conductivity and friability of the coagulum, appear complication in evacuation the whey, results is a coagulum un-characteristics (Cheftel, 1975).

After the phosphatase test performing on the pasteurized milk and Telemea cheese obtained from pasteurized milk had been obtained negative results, which indicate the achievement of a good pasteurization and a loss of enzyme activity from the necessary cheese in the ripening process (Costin, 2003).

**Table 1.** Physical-chemical characteristics for raw milk and milk production

Characteristics	Telemea cheese obtained from un-pasteurized milk	Telemea cheese obtained from pasteurized milk
Acidity , °T	52	50
Fat , %	44	44
Humidity , %	57	60
Protein , %	-	-
Phosphatase test	+	-

For a good evidence of the sensorial qualities of both types of cheese had been performed a sensorial analyses for every types, by a five person group, after which had been obtained the results presented in the five table. Had been followed the main sensorial characteristics of the product: aspect, firmness, color, taste and smell.

Sensorial characteristics of the Telemea cheese obtained from un-pasteurized milk and Telemea cheese obtained from pasteurized milk

1. Telemea cheese obtained from unpasteurized milk
  - a. Aspect- Clean paste, uniform, present seldom gap of pressing and seldom gap of lactic fermentation.
  - b. Firmness- Fine mass, oiliness, uniform consistency, compact, coagulum characteristics
  - c. Color- Color is white, uniform in all mass, at bursting present a porcelain aspect.

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- d. Taste- Agreeable, sweet-sourish characteristic for lactic fermentation, little salty, after taste present an oiliness sensation, full.
  - e. Smell- Specific, sourish, little salty, aroma is very strongly.
2. Telemea cheese obtained from pasteurized milk
- a. Aspect- Clean paste, uniform, present seldom gap of pressing and seldom gap of lactic fermentation.
  - b. Firmness- Fine mass, oiliness, uniform consistency, compact, coagulum characteristics
  - c. Color- Color is white, uniform in all mass, at bursting present a porcelain aspect.
  - d. Taste- Agreeable, sweet-sourish characteristic for lactic fermentation, little salty, after taste present a weak-oiliness sensation, full.
  - e. Smell- Specific, sourish, little salty, aroma is not very strongly.

The results show us that the “Telemea” cheese obtained from unpasturised milk has very special sensorial characteristics in comparison with the “Telemea” cheese obtained from pasteurized milk. Using pasteurization of milk a part of native microorganisms from milk necessary in maturation is destroyed. So, because of this, the milk lost some sensorial characteristics and of course the cheese lost too.

### **Conclusions**

Consistency of Telemea cheese obtained from un-pasteurized milk is oiliness and correctly curdles. For Telemea cheese obtained from pasteurized milk, coagulum it is in concordance with national requirements and presents a little increase humidity. In the same time between Telemea cheeses obtained from un-pasteurized milk and Telemea cheese obtained from pasteurized milk there is different like a consistency of coagulum, taste and smell. Smell and taste for Telemea cheese obtained from un-pasteurized milk is very strongly, this is caused by present in cheeses a milk native microflora that

imprint of paste a smell and taste very aromatic, specific. After pasteurization, in milk appear a lot of change like a smell and taste, with a aromatic very small, in the same time is very affected consistency and colors.

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