

Cheese with different types of additions

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Abstract

Cheeses are products appreciated by a large number of consumers, due to their organoleptic characteristics and biochemical properties. By adding raisins, olives and oranges, improvements can be made in appearance, taste and presentation. These products become much more attractive compared to the classic ones. Cow's milk was used to obtain these types of cheeses. The milk complied with the sanitary and veterinary norms regarding the physico-chemical and microbiological parameters.

Keywords: milk, cheese, raisins, olives, oranges.

1. Introduction

Cow's milk represents 84% of total milk production, a large part of which will be sold as a heat-treated product (pasteurized or UHT pasteurized milk), or processed into dairy products (cheese, yogurt, powdered milk). Heating milk generally modifies the properties of milk proteins but has little effect on digestibility and nutritional properties. Butyric acid in milk is a modulator of gene function and may play a role in cancer prevention. Capric acid may have antiviral effects, and caprylic acid has been shown to delay tumor growth.

Lauric acid may have antiviral and antibacterial functions and may act as an anti-carrier and antiplatelet agent [5]. The effects of heat treatments applied during pasteurization or UHT ultra pasteurization influence the bioavailability of vitamins in particular (B2 and B12), and from a nutritional point of view, their

quantity will be low or may even disappear. In contrast, vitamins B6, B3, B5, B7, A, D and E are very little affected by conventional heat treatments applied in the milk sterilization process [3]. Milk has a high antioxidant capacity which is also influenced by the type of heat treatment applied [10]. Compliance with the conditions and hygiene standards in the dairy product production unit determines the final quality of the product [4, 7, 9].

Raisins, olives and oranges – benefits. Raisins (*Vitis vinifera*) are sweet products obtained by drying grapes, raisins are produced in different geographical regions of the world, being consumed by most people in different regions [15]. Raisins are obtained by two methods, the first method consists of drying the grapes in the sun for 2-3 weeks, the grapes being placed in trays that are left on the ground, and the second method consists of treating them with hot water, (87-93 °C) and a duration of 15-20 seconds

to be introduced into a dehydration chamber at a temperature of 71°C for 20-24 hours, raisins acquire a dark brown color due to the accumulation of melanin pigments produced by an accumulation of polyphenol oxidase and due to non-enzymatic reactions [15]. Raisins are of particular interest in human nutrition due to their diverse chemical composition, which contains potassium, iron, manganese, chromium, calcium, magnesium, nickel, sodium, arsenic, and B-complex vitamins [6, 14]. Raisins being a very rich source of antioxidants that act in the treatment of cardiovascular diseases, the treatment of cancer and constipation. From other points of view, raisins are a source of fructooligosaccharides (fructans), which have an effect similar to probiotics, participating in the maintenance of colon health. They are also an important source of tartaric acid, a fruit acid that is fermented by bacteria in the colon, with a beneficial role in regulating intestinal functions [2].

Olives, due to their rich nutritional value and the sensory value they provide, are often consumed in typical Mediterranean dishes such as pizza, salads or alongside drinks as an aperitif. Of the world production of olives, 80% of them come from the Mediterranean basin, with the rest of the olives coming from the USA, South America and Australia [8].

Orange (*Citrus cinensis*) is widely cultivated in the United States, Mexico, Brazil, China, besides these countries there are other producing countries, for example: (Spain, Turkey, Greece, India, Egypt) producing over 1 million tons per year [15]. Most of the world's oranges are consumed as fresh fruit or juice which can be fresh juice, pasteurized juice or juice obtained from orange concentrates.

Orange peels have been found in historical times to treat and relieve symptoms due to digestive ailments that are associated with acute or chronic inflammation. Orange peel contains numerous flavonoids, including polymethoxylated flavonoids (PMEs), C- or O-glycosylated flavones, and other phenolic acids [15].

2. Material and Method

The following ingredients (raisins, olives and oranges) have been added to the cheeses. To give these products an extra aroma and taste. At the same time, in addition to the fact that these additions improve the taste qualities of the cheeses, they provide the human body with certain elements, compounds with beneficial effects on health, due to their diversified chemical composition. Maintaining the types of addition (raisins, olives and oranges) in appropriate conditions according to specific storage temperatures determines the preservation of biochemical parameters within specific limits and compliance with sanitary and veterinary regulations. Storing milk at specific temperatures determines the preservation of the microbiological quality of the milk, which is essential for obtaining high-quality cheeses. Throughout the entire storage period of the milk, its temperature is monitored (4 °C and a maximum duration of 2-3 days) [12, 13]. The cheese was obtained following the classic production process (milk harvesting, milk reception, milk storage, milk filtration and cleaning, milk preparation for coagulation, processing, forming and pressing, extraction and salting, storage and marketing).



Figure 1. Stages in the process of obtaining cheeses

3. Results and Discussions

Telemea cheese is made from whole or normalized milk, which is curdled. The coagulum obtained is cut into equal pieces having a uniform size. Some classification criteria of telemea cheese

refer to the animal species from which the milk comes (cow, buffalo or sheep milk) [13]. Depending on the degree of maturation, telemea cheese can be fresh when consumed within 15 days from the date of manufacture, or matured telemea when it is more than 30 days from

processing. Telemea cheese is found in parallelepiped shapes with a weight of 1 kg or 0.5 kg [14] Sweet cheese recipes differ because each

manufacturer has its own recipe that produces different types of cheese (with different texture) or with different additions [5, 11].



a



b



c



d

Figure 2. a- Telemea with green olives; b- Telemea with black olives; c- Cheese with raisins; d- Sweet cheese with orange peel

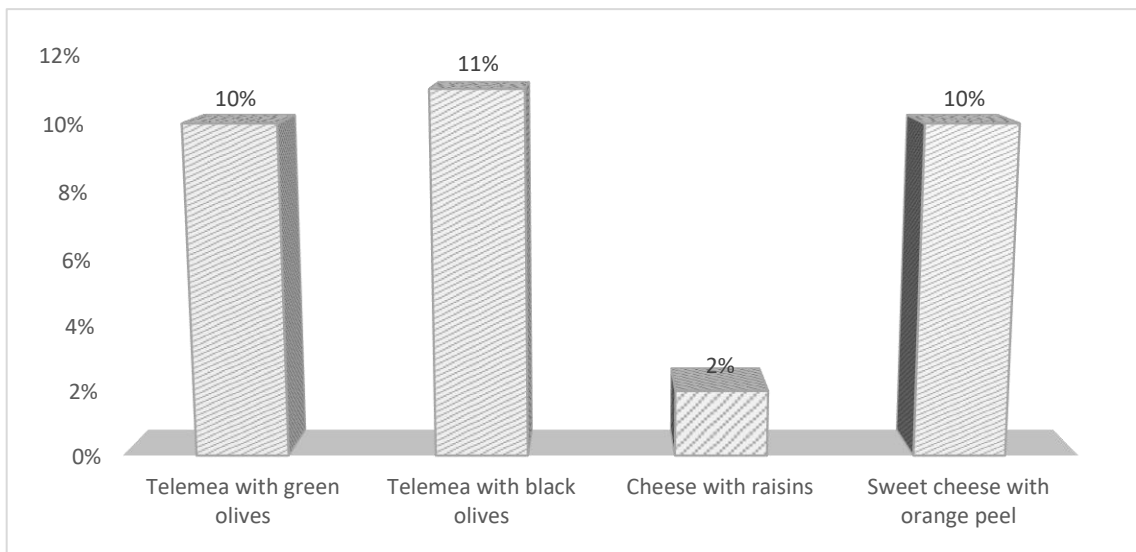


Figure 3. Which of the products is preferred?

Figure 2 a-d shows cheeses obtained with raisins, olives and orange peel. It is necessary to monitor all critical control points along the technological flow of cheese production in order to obtain high-quality cheeses with a long shelf life [1]. These cheeses were given for tasting to 40 people in order to evaluate these products. Figure 3 presents the results regarding the appreciation of these products.

4. Conclusions

The cheeses obtained were appreciated not only for their sensory characteristics but also for their appearance. The types of additions used can also bring improvements in terms of composition and organoleptic aspects.

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