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Assessment of the Nutritional Quality of Cheeses and Imitation Cheeses Marketed in Algeria

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ABSTRACT

Algeria is the leading consumer of dairy products in North Africa. Cheese accounts for up to 40% of the world's milk production and plays a crucial role in a balanced diet. By this study, we look to assess the quality food of cheeses offered to algerian consumer. The following points are treated : names and categories of cheeses/food preparations, classification of products according to the degree of processing, applying the NOVA system, and estimation of the nutritional value as indicated on product labels. Data on 186 products were collected mainly from two supermarkets located in Tizi-Ouzou. The information collected includes: Brand. Name. Weight. Type of packaging. Composition. Nutritional value. Producer. Price. Fifty eight percent (58%) of the products are classified as cheeses, while the remaining 42% were food preparations (imitation cheeses). Furthermore, the study used the NOVA classification system to classify products according to their degree of processing, and it was found that 84% of cheeses and food preparations on the market are classified as NOVA 4, indicating a predominance of ultra-processed foods. In terms of nutritional composition, most categories have a high fat content (>17.5g/100g) and 50% of categories have a salt content greater than 1.5g/100g. It has also been observed that products containing significant amounts of protein and fat tend to be generally more expensive, while those that are more affordable are often characterised by their high carbohydrate content. The study revealed that nutritional value alone is not enough to clearly distinguish cheeses from food preparations. It is necessary to take into account the state of the food matrix and the degree of processing of the product. It is important to raise consumers awareness so that they can make better food choices.

Keywords: Cheese, imitation, NOVA, ultra-processed

1 Introduction

Cheese has always been of great value in the human diet. This foodstuff, which accounts for up to 40% of the world's milk production, plays a crucial role in a balanced diet. It is also used in fast food restaurants as a result of the westernisation of eating habits. In Algeria, consumption requirements for dairy products amount to 5 million tonnes a year, 70% of which is met by the local industry. Moreover, Algeria is the leading consumer of dairy products in North Africa. Similar cheeses are defined as products obtained by blending different constituents, including fat and/or proteins of non-dairy origin. Their manufacturing processes involve replacing some or all of the dairy ingredients with less expensive ones. The issue raised in this study concerns food quality. To do this, we looked at the following points: names and categories of cheeses/food preparations offered to Algerian consumers, classification of products according to the degree of processing, applying the NOVA system, and estimation of the nutritional value as indicated on product labels.

2 Experimental

Data on 186 products were collected mainly from two supermarkets located in Tizi-Ouzou (Hyperba) and Azazga (Priba). These two supermarkets were chosen because of their wide variety of products. To create a database containing important information, we took photos of the product packaging present on the sales shelves. The information collected includes: Brand. Name. Weight. Type of packaging. Composition. Nutritional value. Producer. Price. The data collection period lasted 6 months; from March to August 2023.

3 Results and discussion

A study of the nutritional value of 186 products, divided into two categories, cheeses and imitation cheese, sold on the markets of the wilaya of Tizi-Ouzou, revealed some interesting results. 58% of the products were classified as cheeses, while the remaining 42% were food preparations (imitation cheese). The most

common categories of cheese were camembert, cheese spreads and pizza/gratins, while cheese spreads and pizza/gratins were the most common imitation cheeses. The study also identified no fewer than 95 different names used by manufacturers to name their products. However, it was found that some manufacturers use misleading terms to describe their products, which can mislead consumers. For example, products with names such as "Cheddar", "Cream Cheese Spread", "Speciality Cheese", "Speciality Cheese Spread" or "Pizza Cheese" actually contain vegetable fat (VF). To remedy this, a regulation which came into effect on 31 May 2023 now requires products containing vegetable fat to be correctly labelled as a 'food preparation' with an indication of the nature and percentage of the vegetable fat used. Three industrial groups - Groupe Bel, Le Berbère and Falait - have begun to apply this regulation by using names indicating the presence and percentage of vegetable fat. Furthermore, the study used the NOVA classification system to classify products according to their degree of processing, and it was found that 84% of cheeses and food preparations on the market are classified as NOVA 4, indicating a predominance of ultra-processed foods. In terms of nutritional composition (figure), most categories have a high fat content (>17.5g/100g) and 50% of categories have a salt content greater than 1.5g/100g. It has also been observed that products containing significant amounts of protein and fat tend to be generally more expensive, while those that are more affordable are often characterised by their high carbohydrate content.
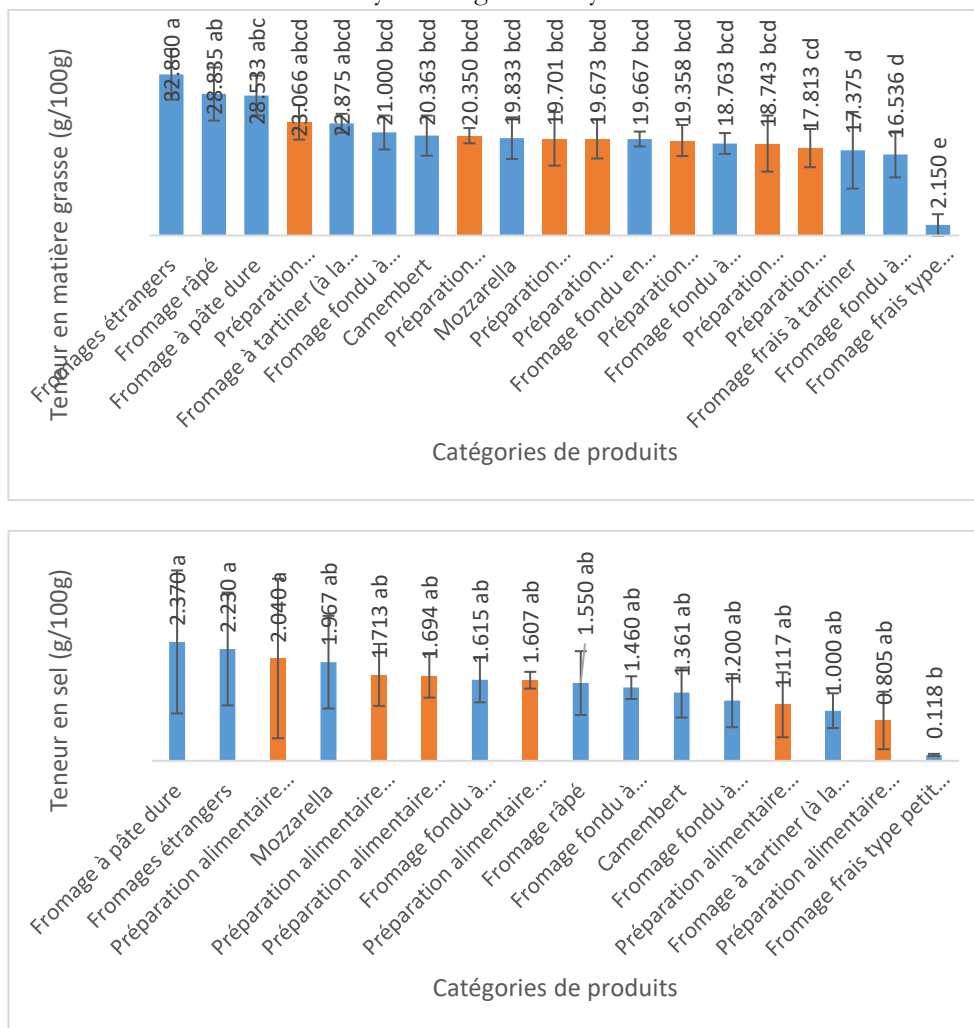

Figure: Fat content (left) and NaCl content (right) for different product categories (g/100g)

4 Conclusion

The study revealed that nutritional value alone is not enough to clearly distinguish cheeses from food preparations. It is necessary to take into account the state of the food matrix and the degree of processing of the product. These results underline the importance of raising consumer awareness of the nutritional value of food products in order to make informed food choices.