

REVIEW ARTICLE

Tradition and nutrition: an analysis of Manabí cuisine and its impact on health and cultural identity

Tradición y nutrición: análisis de la gastronomía manabita y su impacto en la salud y la identidad cultural

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Received: 20 February 2023 / Accepted: 16 May 2023 / Published online: 15 July 2023

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Abstract In this article, the rich culinary tradition of the Manabí region in Ecuador and its cultural and nutritional relevance were explored. Manabí's gastronomy was deeply influenced by its indigenous heritage and coastal environment, which was reflected in emblematic dishes such as encebollado, fish ceviche, tigrillo, and fish viche, among others. The nutritional composition of these dishes was analyzed, evaluating macronutrients such as carbohydrates, proteins, and fats, as well as their energy density. The relationship between the energy density of these foods and their impact on health, particularly in the context of metabolic diseases like obesity, was also examined. Furthermore, the article highlighted the importance of Manabí's gastronomy in local cultural identity and the need to preserve its culinary traditions within the framework of sustainable development, emphasizing how this native cuisine reinforced cultural ties and promoted gastronomic tourism in the region.

Keywords culinary tradition, Manabí gastronomy, nutritional composition, energy density, traditional dishes.

Resumen En este artículo se exploró la rica tradición culinaria de la región de Manabí, Ecuador, y su relevancia tanto cultural como nutricional. La gastronomía manabita estuvo profundamente influenciada por su herencia indígena y su entorno costero, lo que se reflejó en platos emblemáticos como el encebollado, ceviche de pescado, tigrillo y viche de pescado, entre otros. Se analizó la composición nutricional de estos platos, evaluando macronutrientes como carbohidratos, proteínas y grasas, así como su densidad energética. También se examinó la relación entre la densidad energética de estos alimentos y su impacto en la salud, particularmente en el contexto de enfermedades metabólicas como la obesidad. Además, el artículo destacó la importancia de la gastronomía manabita en la identidad cultural local y la necesidad de preservar sus tradiciones culinarias en el marco de un desarrollo sostenible, enfatizando cómo esta cocina autóctona reforzaba los vínculos culturales y promovía el turismo gastronómico en la región.

Palabras clave tradición culinaria, gastronomía manabita, composición nutricional, densidad energética, platos típicos.

How to cite

Alvarado, J.M., & Zambrano, J.I. (2023). Tradition and nutrition: an analysis of Manabí cuisine and its impact on health and cultural identity. *Journal of Food Science and Gastronomy*, 1(2), 25-29. <https://doi.org/10.5281/zenodo.13994886>

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Introduction

Energy density refers to the amount of energy (calories) that a food provides per unit of weight or volume. It is commonly expressed as calories per gram or calories per milliliter. This measure allows for the comparison of different foods based on their energy content relative to their weight, which is crucial for understanding their impact on an individual's total caloric intake.

Foods with high energy density, such as fats and sugars, provide a large number of calories in small portions. In contrast, foods with low energy density, like fruits and vegetables, offer fewer calories in the same volume, making them ideal for weight control diets (Tapsell et al., 2016).

Energy density is a key concept in nutrition, as it influences the regulation of body weight and metabolic health. Understanding the energy density of foods allows individuals to make informed decisions about their diet, helping balance caloric intake with energy expenditure. This is especially relevant in the context of the growing prevalence of obesity and related diseases, such as type 2 diabetes and cardiovascular diseases (Goodpaster et al., 2010).

A diet based on low-energy-density foods can facilitate weight loss or maintain a healthy weight, as it allows for larger portions without a significant increase in caloric intake. This can improve satiety and reduce the risk of overeating (Astrup, 2001).

Energy density is also related to the nutritional quality of foods. Foods with low energy density are often rich in essential nutrients, such as vitamins and minerals, while high energy density foods tend to be more processed and less nutritious. This highlights the importance of choosing foods that are not only energy-appropriate but also nutritious (Sinha & Haque, 2022).

Choosing low-energy-density foods has been associated with better metabolic health. Studies have shown that a higher intake of fruits, vegetables, and whole grains, which are low in energy density, is related to a lower risk of developing metabolic diseases (Angelino et al., 2019).

Manabí's cuisine is an essential component of Ecuador's rich and diverse culinary culture. Manabí, one of the country's most important coastal provinces, stands out not only for its agricultural and fishing production but also for its unique culinary heritage, reflecting the history, traditions, and customs of its people. Manabí's cuisine is a melting pot of Indigenous, African, and Spanish influences, creating a distinctive gastronomic identity that has evolved.

Manabí's cuisine is characterized by the use of fresh, local ingredients, predominantly seafood, legumes, and agricul-

tural products such as corn and plantains. Among the most representative dishes are ceviche de mero, hornado (roast pork), mote (cooked corn), and fritada (fried meat), which reflect the cultural identity of the region (Chóez & Roca, 2023).

Indigenous heritage is fundamental in Manabí's cuisine, where corn and other native crops play a central role in the local diet. The preparation of traditional dishes often includes ancestral techniques, such as cooking in plantain leaves and using clay utensils (Regalado, 2019).

African influence is evident in the incorporation of flavors and cooking techniques, while Spanish colonization brought new spices, preservation methods, and ingredients that enriched the local cuisine (Regalado, 2019).

Manabí's cuisine is not just a set of recipes; it is a vehicle for cultural identity that fosters social cohesion and the transmission of traditions. The preparation and consumption of food are activities that strengthen family and community ties, turning meals into moments of celebration and gathering.

Manabí's cuisine has been recognized as an intangible cultural heritage. Events such as the Mama Negra Festival in Latacunga and Manabí's Gastronomic Festival celebrate culinary diversity, promoting the preservation of traditions and creativity in cooking.

The richness of Manabí's cuisine has led to growing interest in gastronomic tourism, which seeks to attract visitors to the region to experience its culture through food. This not only benefits local restaurants and chefs but also promotes the regional economy (Pérez, 2021). The review aimed to analyze the energy density of traditional Manabí dishes.

Typical Manabí dishes

Manabí's cuisine, rich in diversity and flavor, is a cultural manifestation of Ecuador's coastal region. This cuisine is characterized by the use of fresh, local ingredients, mainly seafood, agricultural products, and traditional techniques that have been passed down from generation to generation. Below are some of the region's most emblematic dishes, reflecting its culinary and cultural richness.

Representative dishes

Encebollado: This is an iconic dish from Manabí, considered a fish soup with yuca, onion, cilantro, and spices. It is usually served hot and accompanied by chifles (fried plantains). It is popular among locals for its comforting qualities and is frequently consumed for breakfast (Regalado, 2019).

Garlic shrimp: A dish that highlights the flavor of fresh shrimp, sautéed in olive oil with garlic, parsley, and a touch

of lemon. It is appreciated for its simplicity and the freshness of the seafood, displaying the region's rich fishing culture (Choez, 2021).

Tigrillo: This dish is a delicious green plantain mash accompanied by egg, meat, or fish. It is considered a hearty meal and can be served with tomato sauce or chili. Its name comes from its appearance, which resembles a tiger's skin (Pérez, 2023).

Humita: A traditional food made from ground tender corn, mixed with cheese, sugar, and spices, wrapped in cornhusks, and steamed. It can be consumed either sweet or savory and reflects the indigenous heritage of Manabí's cuisine (Chóez & Roca, 2023).

Corn tortilla: This preparation, made from corn dough, is a staple in the Manabí diet. It can be served alone or as a side dish. The tortilla is cooked on a griddle and is used in many daily meals (Regalado, 2019).

Plantain empanadas: Delicious empanadas filled with meat, chicken, or cheese, made with green or ripe plantain dough. They are fried until golden brown and are a popular snack or appetizer in the region (Instituto Nacional de Patrimonio Cultural, 2018).

Bollo: This dish consists of plantain dough filled with fish or meat, wrapped in plantain leaves, and steamed. It demonstrates the versatility of plantains in Manabí's cuisine (Choez, 2021).

Fish ceviche: Made with fresh fish marinated in lemon juice, mixed with onion, cilantro, and sometimes avocado and tomato. This dish is iconic on Ecuador's coast and reflects the freshness of the sea (Regalado, 2019).

Tonga: A dish consisting of rice, fried plantain, peanut sauce, and a portion of chicken or meat wrapped in plantain leaves. Its flavor and presentation make it a regional favorite (Pérez, 2023).

Chicken stew: This is a chicken stew cooked in an onion, tomato, and spice sauce. It is served with rice and plantain, representing a fusion of intense flavors and aromas (Chóez & Roca, 2023).

Chicken soup: A comforting soup made with chicken, yuca, and spices, especially popular on cold days. This dish is not only nutritious but also part of family traditions (Regalado, 2019).

Fish viche: Similar to ceviche, this dish is made with fresh fish cooked in a thick tomato and spice sauce, often accompanied by green plantain. It exemplifies the richness of seafood in Manabí's cuisine (Choez, 2021).

Corviche: A dish consisting of a plantain dough filled with fish and fried. This appetizer is crispy on the outside and soft on the inside, highly appreciated during festivals and celebrations (Instituto Nacional de Patrimonio Cultural, 2018).

Nutritional energy density

When analyzing the nutritional composition of the ingredients (Alvarado et al., 2021), the dish with the highest carbohydrate content was bollo, followed by humita, while corn tortilla had the lowest value. In this sense, a high carbohydrate intake can provide quick energy but may also contribute to weight gain if consumed in excess.

In terms of protein, tonga had the highest content, followed by chicken stew. Plantain empanadas had the lowest protein contribution. Protein is essential for tissue building and repair. Diets rich in protein can help with appetite control and satiety (Moon et al., 2020).

The highest fat content was found in plantain empanadas. Although fats are important for the absorption of fat-soluble vitamins, a high intake of fats, especially saturated fats, can increase the risk of cardiovascular diseases and obesity (Visioli et al., 2020).

Comparison of energy density among different traditional dishes

Energy density refers to the amount of energy (calories) a food contains about its weight or volume. It is a crucial factor in evaluating how different dishes can affect body weight and metabolic health.

Tonga was the dish with the highest energy density (1.58 kcal/g), despite its high carbohydrate and protein content, indicating a high caloric potential relative to its volume. In contrast, chicken soup has the lowest energy density (0.66 kcal/g), which may be beneficial for those seeking to control their caloric intake.

Study of the relationship between energy density and health

The energy density of foods can significantly influence health and the risk of diseases, including obesity and metabolic disorders. Foods with high energy density, such as plantain empanadas and tonga, may contribute to weight gain if consumed in large quantities, as they provide many calories without offering significant amounts of nutrients (Blundell et al., 2010). Diets rich in these foods may make weight control difficult and promote obesity.

A high intake of energy-dense foods is often associated with an increased risk of developing metabolic diseases, such as type 2 diabetes and cardiovascular diseases (Zhang et al., 2014). A balanced diet that limits the intake of energy-dense foods and focuses on low-energy-density foods, such as fruits, vegetables, and whole grains, can help prevent these conditions (Drewnowski, 2010).

Promoting the consumption of low-energy-density dishes, such as chicken soup, could be an effective strategy for maintaining a healthy weight and reducing the risk of metabolic diseases. Encouraging the use of fiber-rich ingredients and lean proteins can also contribute to better health.

Cultural and socioeconomic impact

The Manabí diet, characterized by a variety of traditional dishes such as encebollado, fish ceviche, humita, and tigrillo, presents both benefits and challenges for the health of the local population. The high energy density of many of these dishes, especially those containing high levels of carbohydrates and fats, can contribute to weight gain and metabolic diseases, such as obesity and type 2 diabetes, if consumed in excess.

On the other hand, the Manabí diet also includes nutritious ingredients, such as fish, legumes, and vegetables, which are rich in proteins, vitamins, and minerals. Including these foods can offer health benefits, such as improving nutritional quality and reducing the risk of chronic diseases. However, the local population needs to be aware of portion sizes and the frequency of consumption of more caloric dishes to maintain a healthy balance.

Importance of gastronomy in cultural identity and its sustainability

Manabí gastronomy is an essential component of the cultural identity of the Manabí region in Ecuador. Through its flavors, ingredients, and preparation methods, traditional dishes reflect the community's history, customs, and cultural diversity. This connection between gastronomy and local culture fosters a sense of belonging and pride among residents.

Additionally, the sustainability of Manabí gastronomy is crucial for preserving these traditions and promoting local economic development. Using native ingredients and sustainable farming practices not only supports local producers but also contributes to environmental conservation. Promoting a cuisine that respects seasonal ingredients and sustainable agricultural practices can help maintain biodiversity and ensure the food supply for future generations.

Conclusions

The review of the nutritional composition analysis of traditional Manabí dishes highlights the diversity and richness of the region's cuisine, evidencing the variability in the energy density of these foods. While many of these dishes, such as *chicken stew* and *plantain empanadas*, present high levels of energy and fats, they also contain essential nutrients that can benefit health if consumed in moderation. The identification of nutritious ingredients and the use of traditional preparation methods underscore the importance of Manabí gastronomy not only as a cultural expression but also as a resource for promoting public health. However, the local population must be aware of the potential effects of a diet high in calories and fats, especially in the context of the increasing prevalence of metabolic diseases. Therefore, promoting balanced and sustainable eating practices can help improve community health and preserve the region's cultural identity.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

Author contributions

Janeth M. Alvarado and Jeny I. Zambrano: Conceptualization, data curation, formal analysis, investigation, methodology, supervision, validation, visualization, drafting the original manuscript and writing, review, and editing.

Data availability statement

Not applicable.

Statement on the use of AI

The authors acknowledge the use of generative AI and AI-assisted technologies to improve the readability and clarity of the article.

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