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THERAPEUTIC AND NUTRITIONAL VALUE OF DRIED MELON AS A NATURAL NUTRIENT-RICH FOOD PRODUCT

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Abstract

Dried melon is a traditional fruit product widely consumed in many regions of Central Asia. It is appreciated not only for its pleasant taste and long shelf life but also for its nutritional richness and potential health-promoting effects. Fresh melon contains vitamin C, provitamin A carotenoids, minerals, fiber, and various bioactive compounds, while drying reduces water content and increases nutrient density per unit weight. Melon fruits are also known to contain antioxidant compounds that may contribute to general well-being when included in a balanced diet. This article examines the nutritional composition, functional properties, and possible therapeutic significance of dried melon based on an analytical review of relevant scientific literature. The findings indicate that dried melon can be regarded as a convenient source of energy and micronutrients, although its sugar concentration after drying requires moderate consumption.

Keywords: Dried melon, natural nutrients, functional food, Cucumis melo, antioxidants, traditional food, health benefits, dehydration.

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Introduction

In recent years, growing attention has been paid to natural foods that combine nutritional density, long storage stability, and health-supporting properties. Among such products, dried fruits occupy a special place because they are practical, energy-rich, and often retain important biologically active compounds. Dried melon, known in Uzbek food culture as qovun qoqi, is one of the traditional products prepared by dehydrating ripe melon slices. It has long been valued as a sweet and convenient food item, especially in regions where melon cultivation is historically significant.

Melon (Cucumis melo L.) is recognized as a fruit rich in vitamins, minerals, fiber, carotenoids, and other phytochemicals. Studies note that melon flesh contains nutrients such as vitamin C, carotenoids, fiber, and mineral elements, while broader reviews describe melons as sources of provitamin A compounds and antioxidants. Because fruit and vegetable consumption is generally associated with better dietary quality and reduced risk of micronutrient deficiencies, melon-based products may also contribute positively to nutrition when included appropriately in the diet.

The drying process makes melon more stable for storage and transport by lowering moisture content, which helps reduce spoilage risk. FAO guidance on fruit and vegetable processing emphasizes dehydration as an important method for preservation and shelf-life extension. At the same time, drying alters texture, taste, and nutrient concentration. While some heat-sensitive compounds may decrease, sugars and many solids become more concentrated because water is removed. Therefore, dried melon can be considered both a traditional delicacy and a potentially functional food.

The purpose of this article is to analyze the nutritional and possible therapeutic value of dried melon as a natural nutrient-rich food product. The study focuses on three main questions:

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1. What nutrients and bioactive compounds are associated with melon?
2. How does drying influence its nutritional value?
3. What health-related benefits can reasonably be associated with dried melon in dietary practice?

This study is based on a qualitative analytical review of scientific and nutritional sources related to melon composition, fruit dehydration, and the health relevance of fruit-derived bioactive compounds. The article uses a descriptive literature-based method rather than an experimental laboratory design.

The materials for analysis included:

a) review articles on the nutritional composition and health benefits of melon (Cucumis melo);
b) scientific publications discussing carotenoids, vitamin C, and antioxidant compounds in melon;
c) institutional resources on fruit and vegetable nutrition and dehydration;
d) technical materials on dried fruit processing and quality preservation.

The methodological approach involved the following stages: First, relevant publications were identified and grouped by theme: nutritional composition, bioactive compounds, drying technology, and health implications. Second, the information was compared and synthesized to determine the major nutritional characteristics of melon and the likely effects of dehydration. Third, the therapeutic significance of dried melon was interpreted cautiously in the context of nutrition science, with attention to the distinction between traditional beliefs and evidence-supported dietary benefits. Because this article is review-based, no human or animal subjects were involved, and no laboratory experiment was performed.

1. Nutritional composition of melon. The reviewed literature shows that melon is nutritionally valuable due to its content of vitamins, carotenoids, fiber, and minerals. Scientific reviews indicate that melon pulp contains vitamin C, carotenoids, fiber, and phenolic compounds, while broader analyses of melon

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diversity also emphasize its provitamin A value, especially in deeply colored varieties. In addition, melon tissues may contain antioxidant constituents that help neutralize oxidative processes in the body.

USDA nutritional references for melons also show that raw melon varieties can provide meaningful amounts of vitamin A and vitamin C, though exact levels depend on cultivar and flesh color. These nutrients are important for immune support, skin health, epithelial integrity, and antioxidant defense.

2. Effect of drying on melon. Drying significantly reduces water content, which extends shelf life and allows the product to be stored for longer periods. FAO materials on fruit processing describe dehydration as an effective preservation method that lowers spoilage potential and improves transportability. In dried melon, the reduction of moisture leads to a concentration of sugars and total solids, producing a sweeter taste and denser energy profile than fresh melon.

At the same time, some heat-sensitive nutrients, especially vitamin C, may decrease during drying and storage, because ascorbic acid is relatively unstable under processing conditions. Melon reviews and fruit-processing guidance suggest that antioxidant and vitamin retention depend strongly on drying temperature, duration, and storage conditions. Therefore, dried melon does not have exactly the same nutritional profile as fresh melon; rather, it is a transformed food with concentrated energy and partially retained micronutrients.

3. Potential therapeutic and functional significance. The literature supports the view that melon contains compounds with antioxidant relevance, including carotenoids, phenolics, and vitamin C. From a nutritional perspective, this means melon-based foods may help support general health when consumed as part of a balanced diet. Dried melon can be especially useful as:

a natural energy source due to concentrated fruit sugars;

a snack alternative to highly processed sweets;

a source of bioactive plant compounds retained to some degree after drying;

a portable traditional food with cultural and dietary value.

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Because dried melon is concentrated, it may also provide fiber and some minerals in a smaller volume than fresh fruit, although precise values depend on the cultivar and drying method. Melon is commonly associated in the literature with nutritive and antioxidant properties rather than with disease-specific medicinal treatment. Thus, its "therapeutic" role is best understood as supportive dietary value, not as a substitute for medical treatment.

4. Limitations and cautions. The analysis also shows that dried melon should be consumed moderately. The drying process increases sugar concentration, making the product more calorie-dense than fresh melon. This can be beneficial for quick energy, but excessive intake may not be suitable for people who need stricter glycemic or calorie control. In addition, traditional dried fruits must be processed hygienically and stored properly to maintain quality and safety, which is consistent with international dried-fruit standards and food-processing guidance.

The findings of this review confirm that dried melon deserves attention not only as a traditional delicacy but also as a nutritionally relevant food product. Fresh melon is widely recognized as a source of vitamin C, carotenoids, and antioxidant phytochemicals. Although drying may reduce some sensitive nutrients, it simultaneously enhances preservation and increases nutrient density per gram through moisture removal. This makes dried melon a practical food in environments where fresh fruit is seasonal or difficult to store.

From a functional-food perspective, dried melon may be seen as a natural product that combines cultural heritage with nutritional utility. Its sweetness comes from the fruit itself rather than from refined confectionery ingredients, which may make it a preferable option to some industrial snacks. However, this advantage should not be exaggerated. Since drying concentrates sugars, portion size remains important, especially for individuals with metabolic concerns.

Another important issue is the distinction between **traditional healing belief** and **scientifically validated therapeutic action**. In many cultures, dried fruits are described as "healing" because they strengthen the body, improve appetite, or

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help recovery after fatigue. Scientifically, the most defensible interpretation is that dried melon may support health through nutrient intake, antioxidant compounds, and convenient energy provision, rather than by directly curing disease. Reviews of melon bioactives support antioxidant and functional potential, but they do not justify strong clinical claims for dried melon as a medicine.

The cultural importance of qovun qoqi should also be emphasized. Traditional foods often carry nutritional, historical, and social meanings simultaneously. Dried melon represents a connection between agricultural practice, food preservation knowledge, and regional identity. In that sense, its significance is not only biochemical but also ethnocultural.

Future research may focus on laboratory evaluation of locally produced dried melon varieties in Uzbekistan, including measurement of sugar profile, vitamin retention, antioxidant capacity, mineral composition, and sensory quality after different dehydration methods. Such work would help connect traditional food knowledge with modern food science.

Conclusion

Dried melon is a traditional fruit product with important nutritional and functional value. The reviewed sources show that melon is naturally rich in vitamin C, carotenoids, fiber, minerals, and antioxidant compounds. During drying, moisture is reduced and energy density increases, which improves shelf life and convenience but may lower some heat-sensitive nutrients. As a result, dried melon can be regarded as a natural nutrient-rich snack with supportive health value, especially as a source of plant-based energy and bioactive compounds.

Its therapeutic significance should be interpreted carefully: dried melon is not a medicine, but it may contribute positively to a healthy diet when consumed in moderation. The product also has cultural importance as a traditional preserved fruit in Central Asian food heritage. Therefore, dried melon deserves further

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scientific attention as both a functional food and an element of national culinary identity.

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