

## Review Article

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## Evaluation of Fig Varieties for Dual-Purpose Fresh and Dried Use

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**Abstract** This study takes fig (*Ficus carica* L.) as the research object and conducts a systematic analysis of the overall quality performance of different varieties from the perspective of dual use for fresh consumption and drying. Under a unified evaluation framework, multidimensional comparison and evaluation of germplasm resources were carried out focusing on key indicators for fresh consumption, including fruit appearance traits, pulp quality, flavor characteristics, nutritional composition, and postharvest storage performance, as well as processing suitability indicators such as dry matter content, sugar accumulation, peel characteristics, drying efficiency, and dried product quality. Significant differences were observed among fig varieties in terms of morphology, physiological and biochemical traits, and sensory quality. Some superior genotypes showed synergistic advantages in both fresh quality and drying performance, such as higher soluble solids content, better peel structure, and stronger antioxidant capacity. Combined with optimized cultivation management practices and harvesting strategies, the comprehensive utilization value of dual-purpose varieties can be further improved. This study provides a theoretical basis and practical reference for fig variety selection, resource development, and the integrated development of fresh and dried fig industries.

**Keywords** Fig (*Ficus carica* L.); Dual-purpose evaluation; Fresh quality; Drying suitability; Variety selection

### 1 Introduction

Fig (*Ficus carica* L.) is one of the oldest domesticated fruit trees. It is widely grown in Mediterranean and semi-arid regions and is increasingly regarded as a functional food crop. It is easy to propagate vegetatively, can adapt to a wide range of soils and climates, and has long been closely linked with traditional dietary systems. These factors have allowed fig cultivation to continue for thousands of years. Fresh figs contain about 80% water and spoil very easily. Their postharvest storage life is usually only a few days, which limits market circulation and leads to significant losses in areas without adequate cold-chain conditions (Panduraj et al., 2021). In contrast, drying can significantly concentrate sugars, dietary fiber, minerals, and various phytochemicals, resulting in a stable product with high energy density, longer shelf life, and wider uses. New drying methods, such as slice drying or osmotic dehydration, can improve year-round supply while maintaining or even enhancing phenolic compounds and mineral content (Manjunath et al., 2019).

In terms of nutrition, both fresh and dried figs are rich in carbohydrates, dietary fiber, minerals (especially potassium and calcium), vitamin C, and polyphenolic compounds with antioxidant activity (Sandhu et al., 2023). The drying process significantly increases the concentration of sugars and dietary fiber, and it usually also raises total phenolic content and antioxidant capacity, especially in dark-skinned cultivars and in peel tissues (Yang et al., 2023).

This study evaluates fig cultivars from a dual-purpose perspective. Under uniform conditions, it systematically assesses both fresh consumption and drying performance, focusing on key fruit traits related to fresh use and important indicators related to drying. By comparing different cultivars and selecting those that meet quality requirements for both uses, this study provides a scientific basis for cultivar selection in new and existing orchards. It also promotes the use of locally adapted but underutilized germplasm resources and supports the development of an integrated fresh–dried fig industry chain in Mediterranean-type environments.