

# Microbial Explorations of Dried Fruits of *Ficus carica*: Insights into Rhizospheric and Endophytic Bacterial Diversity

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## Abstract

Dried fruits of *Ficus carica*, commonly known as figs, have been cherished for their rich flavor and nutritional benefits for centuries. Apart from their culinary value, figs are also known to harbor a diverse range of microorganisms, including bacteria, which play crucial roles in the fruit's growth, development, and overall health. This study aims to explore the microbial diversity present in the rhizosphere and endosphere of dried fruits of *Ficus carica*, providing valuable insights into the bacteria associated with this fruit and their potential ecological significance. A high diversity of bacterial communities associated with *Ficus carica* rhizosphere soil was detected, especially in two regions of Beni Khjar and Kerkouane. Phylogenetic analysis of the isolates demonstrated that species were divided into six phyla, 17 different bacterial genera, indicating a large genetic diversity in *Ficus carica* rhizosphere.

**Keywords:** *Ficus carica*; Dried fruits; Figs; Rhizospheric bacteria; Endophytic bacteria; Microbial diversity; Plant-microbe interactions

## Introduction

*Ficus carica*, a member of the Moraceae family, is a deciduous tree widely cultivated for its succulent fruits, known as figs. Figs have long been recognized for their nutritional composition, containing essential minerals, vitamins, and dietary fiber [1]. In addition to their dietary significance, figs are known to host a complex microbial community that influences their growth, ripening, and preservation. Among these microorganisms, bacteria have gained attention due to their diverse metabolic capabilities and potential interactions with the fruit's physiology. There is currently an increasing demand for the characterization of endophytic bacteria isolated from different parts of plants in order to improve the organic agriculture practices [2]. The current research was performed to identify both rhizospheric bacteria isolated from the rhizosphere of *Ficus carica* in three different sites in the north of Tunisia and endophytic bacteria isolated from dried figs. We then characterized them for a diversity of plant growth-promoting

## **Conclusion**

Microbial explorations of dried fruits of *Ficus carica* have provided