



Survey and investigation of fungal pathogens in *Ficus carica* L. throughout Beed district.

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Manuscript details:

Received: 09.04.2026
Accepted: 09.05.2026
Published: 30.05.2026

Cite this article as:

Ahiwale SK and Patale SS (2026) Survey and investigation of fungal pathogens in *Ficus carica* L. throughout Beed district, *Int. J. of Life Sciences*, 14 (1A): 85-87.
<https://doi.org/10.5281/zenodo.20653877>

Available online on <http://www.ijlsci.in>
ISSN: 2320-964X (Online)
ISSN: 2320-7817 (Print)



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ABSTRACT

In India, Anjeer (*Ficus carica* L.) is a common edible fruit. It contains potassium, magnesium, zinc, vitamins A, C, and K, among others. India produces 14,698 tons of anjeer annually, ranking 12th in the world. Despite being a modest fruit crop, Anjeer is one of the most important cash crops in the fruit category. Regarding the Beed district, the temperature often ranges from 31 to 40 degrees celsius, but during the winter it drops below 25 degrees, which encourages fungus to attack Anjeer plants. One of the prevalent fungal diseases in Anjeer is rust disease. Tiny golden dots on the upper surface of leaves are signs of rust disease. These dots are merely reddish-brown blemishes that enlarge with time. Another prevalent fungal disease that affects every part of plants is anthracnose. Anthracnose initially manifests as tiny, black, yellow or brown dots on leaves. These patches become larger and spread to entire regions as the disease worsens. Additionally, it results in cankers on leaf petioles and stems. Anthracnose is typically transmitted by airborne conidia and plant debris. A well-known fungal disease of figs, leaf spot is distinguished by tiny brown patches that appear on the leaves. In the end, the leaf's centre becomes papery and falls off. The 25–27 degree celsius temperature range is ideal for the development of leaf spot disease. During the wet season, it spread quickly. The development of Alternaria rot used to occur in warm, humid weather. *Alternaria sp.* is the causative fungus which grows on leaves and produces fruit with sunken yellow olive blemishes or olive green flecks. Aspergillus rot disease used to manifest signs in the interior tissues of figs under water stress situations. Anjeer leaf blight disease is another prevalent condition that manifests as little patches of yellow on the leaves and become brown most of the time. In general, leaf blight thrives in warm, humid weather. These are Anjeer's well-known reported fungal diseases.

Keywords: *Ficus carica*, Beed, Anjeer, Fig

INTRODUCTION

The deciduous fig tree (*Ficus carica* L.) can reach a height of 10 to 30 feet. This edible fruit, which is a member of the Moraceae family, can be eaten fresh or dried. 53 genera and 1400 species, including those in the genus *Ficus*, make up the family Moraceae, also known as the mulberry family. The family includes trees, shrubs, lianas and herbs that frequently provide latex. Originating in the eastern Mediterranean

region, figs are now widely grown all over the world, especially in India. Growers and farmers became very interested in this fruit because of its nutritional worth and therapeutic qualities. Figs have dense, soft wood, and their bark is smooth, grey and free of cracks. The leaves are big, petiolate, plamate with three to seven lobes. The upper surface is thick and rough while the under surface is soft. One characteristic that sets different fig kinds apart is their leaves. The fruit is oblong, pear-shaped, syconium, and ranges in color from yellowish green to coppery, bronze or dark purple. Its length is one to four inches. Fruits have thin, perishable skins, especially as they are maturing. Numerous antipyretic, anti-inflammatory, ant constipation, anticancer, antiviral, and anti mutagenic properties can be demonstrated by *Ficus carica*. *Fusarium oxysporum* causes the leaves to wilt and turn yellow, which is followed by the death of the tree. Numerous fungus, including *Cercospora*, can produce leaf spot, which reduces photosynthesis and tree productivity by causing the leaves to blight and become spotted. The district of bees was chosen for the investigation.

MATERIALS AND METHODS

- 1) Selection of plant parts: The diseased plant parts, such as leaves, stems, roots, and fruits, were gathered from several Beed district locations.
- 2) Fungal isolates: Agar media is used to separate fungus from plant samples that are infected.
- 3) Cultural media: To cultivate and preserve fungal isolates, some cultural media, such as PDA, are utilized.
- 4) Surveys and sampling: Anjeer tree surveys and sampling were carried out in different Beed regions.
- 5) Pathogenicity testing: Verifying a fungal isolate's involvement in disease formation by assessing its pathogenicity on Anjeer plants.

RESULTS

Anjeer plant portions that were infected primarily displayed rust disease, which typically manifested on the leaves. By looking for black, yellow or brown dots on leaves which indicate anthracnose, rust illnesses can be easily identified. *Alternaria* rot, which is brought on by *Alternaria* species, has also been reported from Ashti tehsil. Additionally, several plant parts displayed Anjeer leaf blight disease.

DISCUSSION

In terms of geographic size, Beed district is a rather large district. Ashti, Potoda Shirur and Majalgaon tehsils make up the majority of its coverage. This work examines a number of elements that lead to the development of Anjeer's fungal illness. The development of fungal diseases can be influenced by environmental factors such as temperature, humidity, and rainfall. Fungal disease growth is also influenced by soil characteristics like as pH, nutritional deficiencies, and inadequate soil drainage. Ineffective fertilization, irrigation, and pruning techniques can all raise the chance of a fungal disease assault. These aspects will also be analysed in future research projects.

Conflict of interest

The authors declare no competing interests.

Data Availability Statement: Not applicable.

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