

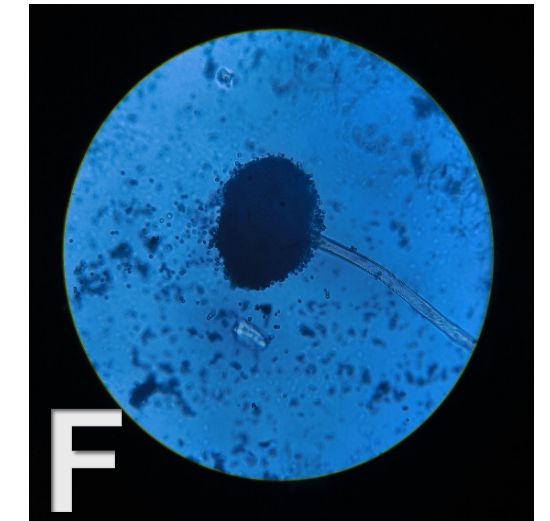
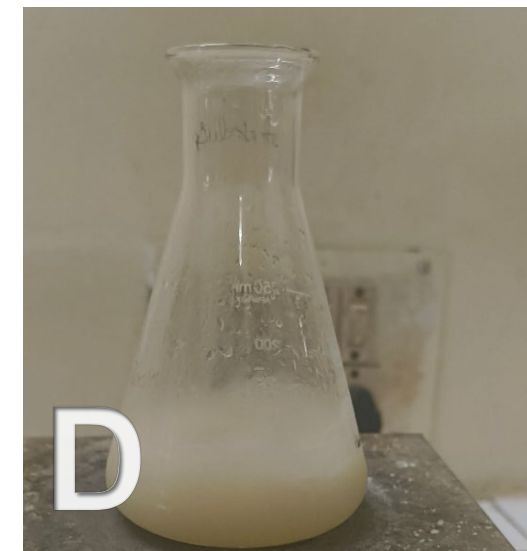
Formulation of biofungicide for Leaf Blight of *Jasminum sambac*

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INTRODUCTION AND AIM

Jasmine leaf blight, caused by pathogens like *Alternaria alternata* has significant economic repercussions, particularly in regions where jasmine cultivation is a major agricultural activity. The disease leads to reduced flower yield and quality, directly impacting the income of farmers and the ornamental plant industry. Studies indicate that yield losses due to leaf blight can range from 32% to 57%, depending on the severity of the infection. The present investigation was focused to formulate an effective biofungicide from naturally occurring phylloplane fungus of *Jasminum sambac* (Jasmine) against the leaf blight disease causal organism and phytopathogen, *Alternaria alternata*



A. Leaf Blight of *Jasminum sambac*

B. Microscopic view of *Alternaria alternata*

C. Gene sequencing of *Alternaria alternata*

D. *Alternaria* conidiospore suspension.

E. Spore inoculation.

F.. *Aspergillus niger* -Microscopic View

G. Fungicide with 79ml of spore suspension + 20ml of glycerol + 1ml of tween 80.

H. After 10 days – minimal zone of leaf blight

I. Fungicide with 49ml of spore suspension + 50ml of coconut oil + 1ml of tween 80.

METHOD

1 Collection of blight leaves

2 Isolation of *Alternaria alternata*

3 Pathogenicity Test

4 Isolation of Phylloplane Fungi

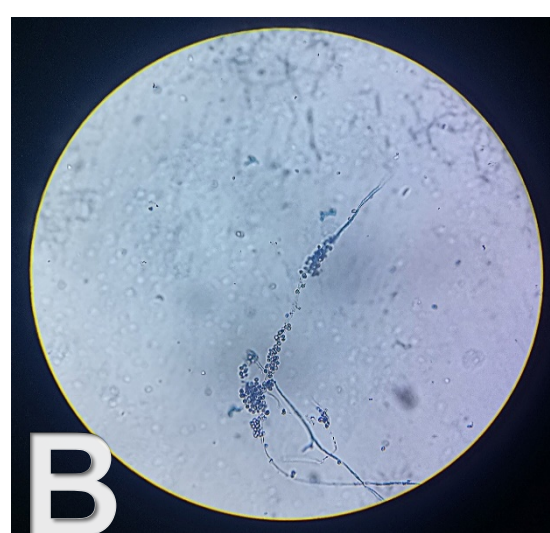
5 Identification of Phylloplane fungi

6 Antagonistic Activity

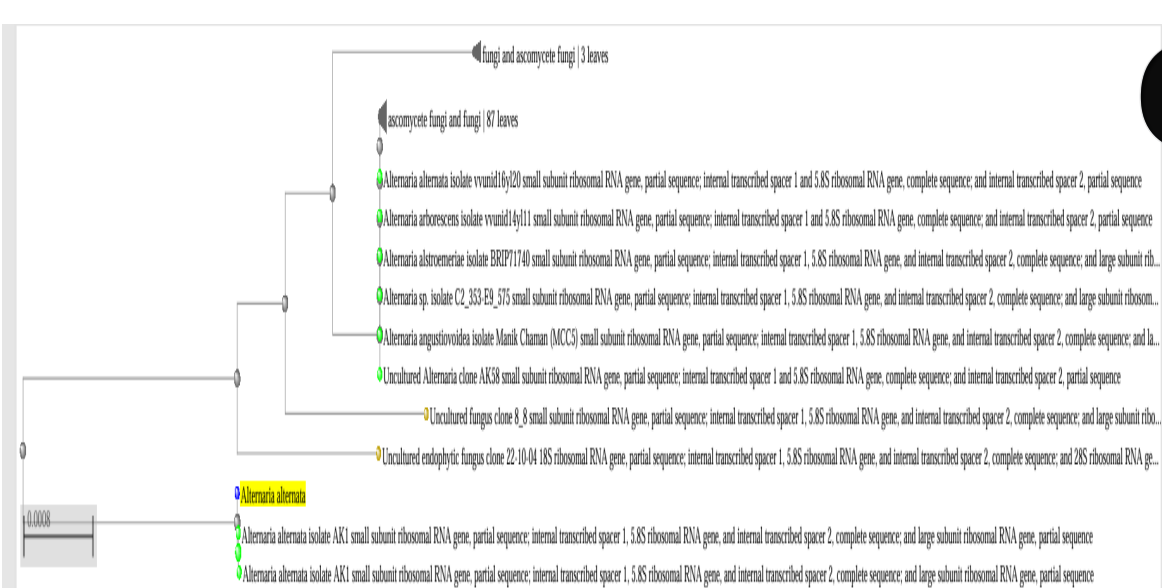
7 Formulation of Biofungicide

8 Testing the efficacy of fungicide field study

RESULTS & DISCUSSION



LOCUS PV368447 566 bp DNA linear PLN 30-MAR-2025
DEFINITION *Alternaria alternata* isolate AK1 small subunit ribosomal RNA gene, partial sequence, internal transcribed spacer 1, 5.8S ribosomal RNA gene, and internal transcribed spacer 2, complete sequence; and large subunit ribosomal RNA gene, partial sequence.
ACCESSION PV368447
VERSION PV368447.1
KEYWORDS
SOURCE *Alternaria alternata*
ORGANISM *Alternaria alternata*
Eukaryota; Fungi; Dikarya; Ascomycota; Pezizomycotina; Dothideomycetes; Pleosporomycetidae; Pleosporales; Pleosporineae; Pleosporaceae; *Alternaria*; *Alternaria* sect. *Alternaria*; *Alternaria alternata* complex.
REFERENCE 1 (bases 1 to 566)
AUTHORS Kalidoss, A. and Gnana Asirwatham, T.
TITLE Formulation of biopesticide by using *Aspergillus niger* against *Alternaria alternata* infected *Jasminum sambac*
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 566)
AUTHORS Kalidoss, A. and Gnana Asirwatham, T.
TITLE Direct Submission
JOURNAL Submitted (25-MAR-2025) Department of Microbiology, SRM Arts and Science College, Kattankulathur, Tamil Nadu 603203, India
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Sequencing Technology :: Sanger dideoxy sequencing
##Assembly-Data-END##
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CONCLUSION

1. Phyllosphere fungus from *Jasminum sambac* such as *Aspergillus niger* can be used effectively as a fungicide to combat the phytopathogenesis caused by *Alternaria alternata*. 2. In formulation of biofungicide coconut oil served as a better carrier than glycerol. 3. *Aspergillus niger* showed the highest antifungal activity against *Alternaria alternata*. 4. In the present study *Aspergillus niger* spore suspension was used as fungicide to kill the pathogen. Alternatively, biomass dried powder can also be used to formulate the fungicide. 5. *Aspergillus niger* biofungicide is an alternative to chemical fertilizers and is eco-friendly.

FUTURE WORK / REFERENCES

Furthermore detailed studies are required to investigate the biochemical compound involved in the antagonist activity against *Alternaria alternata*.

Department of plant pathology TNAU, COIMBATORE, & P, M. L. (2024). Management of Foliar Diseases in Jasmine. Madras Agricultural Journal, 111(December).
<https://doi.org/10.29321/MAJ.10.600017>