

## ANTIFUNGAL ACTIVITIES IN ROOTS EXTRACTS OF *DECALEPIS HAMILTONII*

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### ABSTRACT

In the present study, the root hot extracts, root cold extracts, peel hot extracts was investigated for antifungal activity against *Rhizoctonia solani*. The root hot extracts, peel hot extracts showed high degree of antifungal activity. Whereas root cold extracts showed mild degree of antifungal activity. The activity was correlated with fungal biomass.

**KEYWORDS:** The root hot extracts, *Rhizoctonia solani*.

### INTRODUCTION

*Decalepis hamiltonii* (Wight & Arn) is the sole species of plant in the genus *Decalepis*. It is endemic to peninsular India and known by its names of Makaliber in Kannada & Magali Kizhangu in Tamil. It is a

plant whose root is used in ayurvedic medicines and for use in pickles. It belongs to the family Apocynaceae.<sup>[1,2]</sup>

**Part used:** Root.

### Therapeutics

Tuberous roots are used as a cooling agent and blood purifier. Hence used to prepare refreshing drinks. Roots are used to cure indigestion, deficient digestive power, dysentery, cough, bronchitis, leucorrhoea, skin disease, fever, thirst, vomiting, poisoning, anaemia, debility, blood disease.

In the family Apocynaceae, the plant *Decalepis hamiltonii* is not phytochemically well explored.<sup>[3,4]</sup>

## **MATERIALS AND METHODS**

### **PLANT MATERIAL**

For the present study, the plant material (root) was collected from pudukkottai district and the plant material was taxonomically identified at Department of Botany, National college of arts and science, Trichy.

### **EXTRACTION OF PLANT**

The roots of the plant *Decalepis hamiltonii* was cut into small pieces and shade dried for 3 days. We have prepared 3 extract.

#### **Root hot extract**

250 gm of finely chopped root was boiled with 50% aqueous ethanol for one hour. The extract was filtered and concentrated.<sup>[5]</sup>

#### **Root cold extract**

Roughly 250 gm of chopped root was soaked with 80% aqueous ethanol for 24 hours and filtered.<sup>[5]</sup>

#### **Peal hot extract**

84 gm of root peal was boiled with 50% aqueous ethanol for one hour. The extract was filtered and concentrated.<sup>[5]</sup>

The preliminary phytochemical investigations were performed using standard qualitative chemical test and the phytoconstituents were identified as flavonoids.<sup>[5,6]</sup>

### **Screening of anti fungal activity**

#### **Source of fungi**

The fungal culture tested for anti fungal activity of *Decalepis hamiltonii* the plant extract, were obtained from DST FIST Government of India sponsored culture collection center of Department of botany National college, Thiruchirapalli. The fungal species is *Rhizoctonia solani* (NCBT 194).

*Rhizoctonia solani* (Corticaceae) Basidiomycetes the fungal colonies are characterised by the presence of aerial mycelium, white coloured.<sup>[7]</sup>

### Culture medium

The antifungal activity of *Decalepis hamiltonii*. The plant extract was conducted as per the Czapek Dox Agar medium formulated by Raper and Thom 1949. The medium was prepared as per the following formulation.

### Czapek Dox Agar medium

Sodium nitrate	2.0 gm
Potassium dihydrogen phosphate	1.0 gm
Magnesium sulphate	0.5 gm
Potassium chloride	0.05 gm
Ferrous sulphate	0.01 gm
Sucrose	30.0 gm
Agar	15.0 gm
Distilled water	1000 ml
pH	6.8 - 7.0

## RESULTS AND DISCUSSION

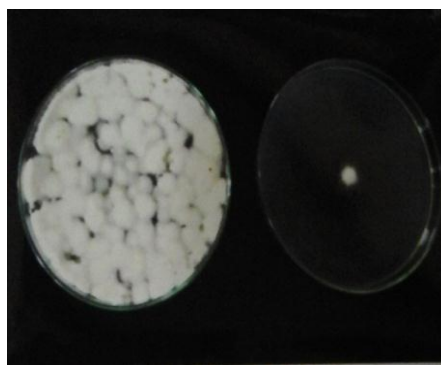
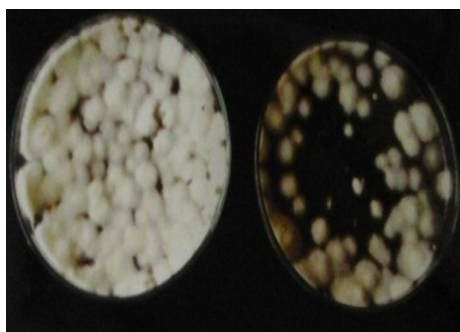
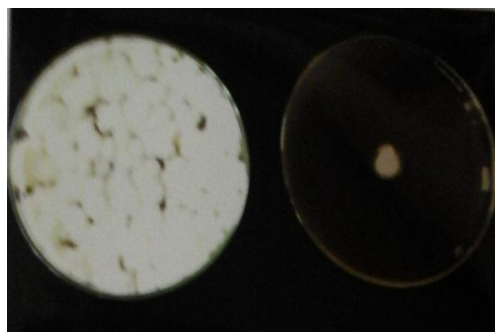
The root hot extract, Root cold extract and peel hot extracts of *Decalepis hamiltonii* was conducted for the antifungal activity of *Rhizoctonia solani*. Among the three extract has shown high degree of antifungal activity. Whereas root cold extract has shown mild degree of antifungal activity at 500ppm concentration.

The antifungal activity of *Decalepis hamiltonii* was conducted with the fungal Biomass at the end of 120 hours.<sup>[8]</sup>

Organism	control	Root hot extract	Root cold extract	Peel hot extract
<i>Rhizoctonia solani</i>	1500 mg	50 mg	450 mg	25 mg
Ratios	—	60:2.0	60:18	60:1.0

The control with biomass 1500 mg, root hot extract assayed showed 50 mg, root cold extract assayed fungal biomass showed 450 mg where as peel hot extract assayed fungal biomass showed 25 mg.

The antifungal activity and fungal biomass ratio for root hot extract was 60:2, for root cold extract 60:18, and for peel hot extract 60:1.<sup>[9]</sup> From this work it can be concluded that the root hot extract and peel hot extract posses antifungal compound, which is to be isolated for further work.

**Root of Decalepis hamiltonii****Peel hot Extract of Decalepis hamiltonii****Root cold Extract of Decalepis hamiltonii****Root hot Extract of Decalepis hamiltonii**

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