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ORIGINAL ARTICLE

ISOLATION OF WOOD ROT FUNGI FROM MARUTHAMALAI HILLS WESTERN GHATS AREA OF SOUTH INDIA

Meenakshisundaram M[1] and Bharathiraja C[2]
1- Post Graduate and Research, Department of Biotechnology, Nehru Memorial College, (Autonomous), Puthanampatti, Trichy-621 007, Tamilnadu, India
2- Department of Environmental Biotechnology, Bharathidasan University, Trichy, Tamilnadu, India.

ABSTRACT: An attempt was made to isolate the wood rot fungi from the different host plants at maruthamalai hill forest area. This is a located in Western Ghats of southern India. There are 30 wood rot fungal samples were observed. This is first report of kind from maruthamalai hill forest among the white rot fungi. These fungi might have played very important role in sustaining in forest ecosystem in maruthamalai hill forest of Western Ghats, South India. From the above isolated thirty wood rot fungi samples were identified, and screening the best wood rot fungi for further studies.
KEYWORDS: Basidomycetes, Isolation, Western Ghat, Wood Rot Fungi.

INTRODUCTION

Wood is formed of three main constituents, cellulose, hemicelluloses and lignin. Lignins constitute the second most abundant group of biopolymers in the biosphere (Karthikeyan *et al.*, 2005) Lignin is highly resistant towards chemical and biological degradation, and confers mechanical resistance to wood (Martinez *et al.*, 2005). The plant material contains 25-30% of lignin, which gives plants their structural integrity and provides protection from pests and pathogens (Orth *et al.*, 1993). Lignins are polymers consisting of phenylpropane units in which the aromatic rings are substituted with guaiacyl propane units, syringylpropane units or para hydroxyphenylpropane units (Ralph *et al.*, 2004). Wood rotting fungi are an important component of forest ecosystems (Wang *et al.*, 2011). White rot fungi belong to the order basidomycetes that participates in the biodegradation of lignin in nature, which is essential for global carbon recycling (Siripong *et al.*, 2009). White rot fungi can degrade lignin and a range of environmental pollutants by many of their extra cellular ligninolytic enzymes (Selvam *et al.*, 2011). White rot fungi possess a number of advantages that can be exploited in bioremediation systems, since the key components of their lignin-degrading system are extracellular, these fungi can degrade an extremely diverse range of very persistent or toxic environmental pollutants (Silvia *et al.*, 2008). The ability of fungi to degrade lignocellulosic materials is due to their highly efficient enzymatic system (Sanchez, 2009). Microbial degradation of lignin has of cellulose are extremely attractive for use in biological pulping processes, to improve the digestibility of highly lignified received considerable attention in recent years. Fungi that selectively remove lignin without loss of appreciable amounts plant industrial products (Kirk *et al.*, 1980). White rot fungi emerged as a promising group for biotechnological applications, especially in bioremediation (Reddy *et al.*, 2011). In the present study isolation of 30samples of wood rot fungi from different host plants have been carried out maruthamalai hill.

MATERIALS AND METHODS

2.1. Collection and Isolation

Thirty samples of fruiting bodies of the wood rot fungi were collected from decayed wood and living trees of maruthamalai hill, Western Ghats, Tamilnadu. The samples were marked with information such as collection number with names, procurement location and date of collection. Fruit bodies were wrapped in paper bags and brought to the laboratory. The collection sight is situated in the 76^0 55E and 110.5 'N. It receives rainfall of about 450mm per year with humidity and even temperature. The soil condition was generally shallow with sandy loam texture; rocky substratum was available at steepy areas (Paulsamy, 2012).

The wood rot fungal sporocarps were photographed at the sight using digital camera. The various wood rot fungi and their host were

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Corresponding Author: Meenakshisundaram M, Post Graduate and Research, Department of Biotechnology, Nehru Memorial College, (Autonomous), Puthanampatti, Trichy-621 007, Tamilnadu, India.
E-mail: meenakram06@yahoo.co.in

noted with the help of local tribal people. The fungal sporocarps were carefully in two sets of samples (Mueller *et al.*, 2004). One set of the sample collected were preserved for culturing the mycelia for further studies. The second set of the samples were used for the study of morphological (Colour, shape, and odour) characters, microscopical characters and the biochemical identification according to the method of Walting, (1971). The fungal growth was cut sterilized with 1% mercuric chloride solution, repeatedly washed with sterile distilled water (Walting, 1971) and inoculated on 2 % malt agar medium in petriplates. The fungal growth which occurred on the plates were subcultured and maintained in malt agar slants.

RESULTS AND DISCUSSION

3.1. Collection of the Samples

In the present study thirty samples were collected from various location of maruthamalai hill area of Tamilnadu in South India. General macrocharacters of the fruit body including color of different tissues and type of rot were noted in the field. The isolation of wood rot fungi and their Character are presented in Table 1.

Table 1: Detailed of wood rot fungi collected from maruthamalai

S. No	Strain No	Mushroom vernacular	Mushroom character	Host botanical name
1.	M1	Marakaalaan	Non edible	*Acacia lucophloea*
2.	M2	Marakaalaan	Edible	*Acacia nilotica*
3.	M3	Vellai kaalaan	Edible	*Agave americanum*
4.	M4	Marakaalaan	Edible	*Albizzia americanum*
5.	M5	Unknown	Non edible	*Albizzia lebbeck*
6.	M6	Unknown	Non edible	*Atlantia monophylla*
7.	M7	Unknown	Non edible	*Azadirachta indica*
8.	M8	Unknown	Non edible	*Bambusa arundinacea*
9.	M9	Marakaalaan	Edible	*Bouhinia variegata*
10	M10	Marakaalaan	Non edible	*Cassia fistula*
11.	M11	Marakaalaan	Non edible	*Cassia siamea*
12.	M12	Marakaalaan	Non edible	*Delonix regia*
13.	M13	Marakaalaan	Non edible	*Ficus bengalensis*
14.	M14	Unknown	Non edible	*Pongamia pinnata*
15.	M15	Kuyaan kaalaan	Edible	*Santalum album*
16.	M16	Marakaalaan	Non edible	*Tamarindus indica*
17.	M17	Marakaalaan	Non edible	*Tectona grandis*
18.	M18	Marakaalaan	Non edible	*Terminalia arjuna*
19.	M19	Marakaalaan	Non edible	*Thevita perviana*
20.	M20	Marakaalaan	Non edible	*Polyalthia longifolia S.nn*
21.	M21	Marakaalaan	Non edible	*Murraya Koenigii*
22.	M22	Seeni kallan	Non edible	*Azadirachta indica*
23.	M23	Marakaalaan	Non edible	*Mangifera indica*
24.	M24	Marakaalaan	Non edible	*Moringa pterygosperma*
25.	M25	Yaanai mithi kaalaan	Soil - Edible	*Dalbergia sisssoo*
26.	M26	Sarugu mutti kaalaan	Soil - Edible	*Sesbania grandiflora*
27.	M27	Neei kaalaan	Soil - Edible	*Cassia roxburghii*
28.	M28	Yaanai kaathu kaalaan	Soil - Edible	*Acacia auriculiformis*
29.	M29	Marakaalaan	Edible	*Ficus benghalensis*
30.	M30	Vellai kaalaan	Edible	*Cocos nucifera*

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