

## FIRST RECORD OF *FUSARIUM* TUBER ROT IN *BORASSUS FLABELLIFER* L. SEEDLINGS FROM INDIA

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Received-08.08.2020, Revised-30.08.2020

**Abstract:** This article reports the first case of *Fusarium solani* caused tuber rot in *Borassus flabellifer* from India.

**Keywords:** Fusarium, India, Palmyra, Seedling, Tuber rot

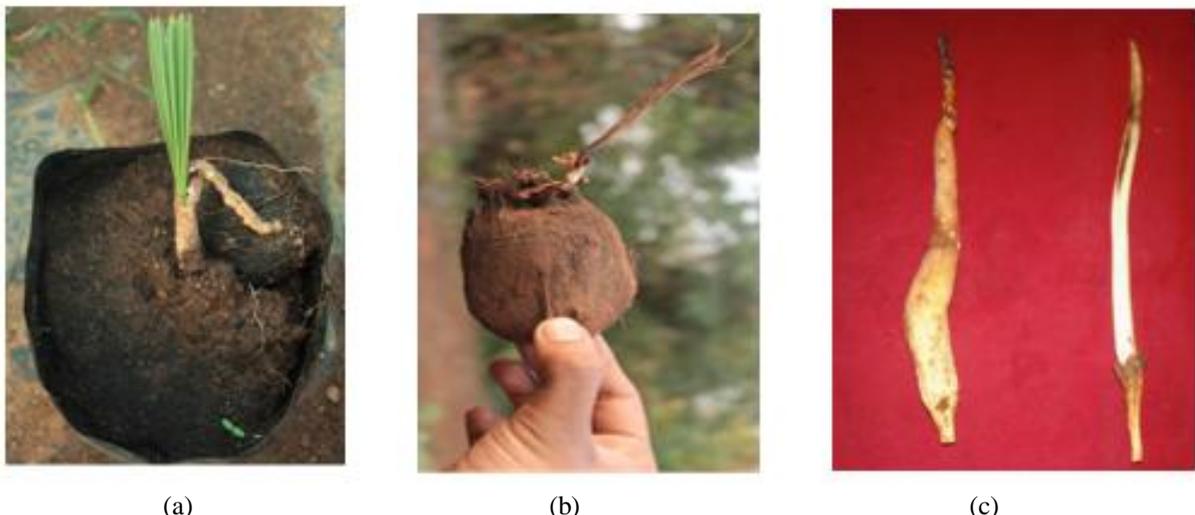
### INTRODUCTION

*Borassus flabellifer* L., also known as palmyra palm is native to tropical regions of Africa, Asia and New Guinea. As more than 30 commercially important products are sourced from this palm, this plant is a major contributor to the rural farm economy (Bhuvaneshwari et al., 2010). The sweet sap tapped from this palm, called toddy, is a local drink with intoxicant and medicinal properties. In its younger stages, palm seedlings suffer from tuber rot, which affects its establishment and growth. In India, soil borne fungi have been reported to be causing tuber rot in palmyra palm viz; *Phytophthora* sp. (McRae, 1923; Marudarajan, 1941),

*Rhizactonia solani* (Sankaralingam, 1999; Maheswarappa and Rajkumar, 2014), *Pythium* spp. (Blatter, 1926) and *Thielaviopsis state* of *Ceratocystis paradoxa* (Bhuvaneshwari et al., 2010).

In November 2017, a tuber rot (Fig. 1b) was recorded in palmyra seedlings in the Tree Crop Nursery of the College of Forestry, Kerala Agricultural University, Thrissur, Kerala state. The infected tuber showed rotting at the end, as well as in the portion immediate to the middle region.

The infected outer tuber sheath, initially brown in colour later changed to black. In its advanced stages, the infection was noticed to spread to the inner regions and a black discolouration was observed on removing the outer sheath (Fig. 1c).



**Fig 1.** Seedling habit and symptom description, a- Healthy seedling. b - Infected tuber developing from the seed. c – Black rot at the end of the tuber and infected inner tissue showing discolouration.

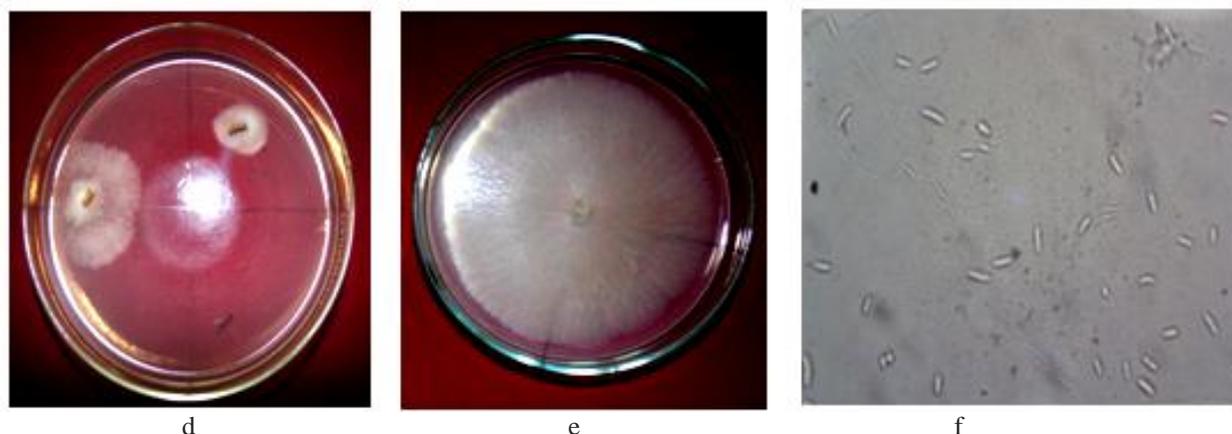
The pathogen was isolated into a PDA medium, and its cultural, as well as morphological characters were recorded. Initially, the fungus grew as white thread like mycelia and attained full growth in Petri plate by eight days of incubation. Both macroconidia and microconidia were observed. Macroconidia were 2-3 celled, hyaline, sickle shaped with 25-50 X 3.2-5.5

µm in dimension, whereas microconidia were hyaline, fusiform, two celled with 6.5-17.6 X 1.5-5 µm in dimension (Fig. 2). Based on these features the pathogen was identified as *Fusarium* sp. For species identification and confirmation, the isolate were sent to National Centre for Fungal Taxonomy (NCFT), New Delhi. The pathogen was confirmed as

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*Fusariumsolani* and deposited at NCFT with an accession number 8368.17. From a detailed literature review, it was revealed that this observation is the

first report of *Fusarium* sp. caused tuber rot in *Borassusflabellifer* from India.



**Fig 2.** Cultural and morphological character of the *Fusariumsolani*. d – Initiation of fungal growth in Petri plate. e – Full growth of fungal pathogen in Petri plate. f – Conidial character under microscope.

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