

## Methods to study soft rot of turmeric caused by *Pythium myriotylum* Drech.

SHAIKH RUHINA AND B.M. KAREAPPA\*

Department of Biotechnology, D.S.M., College, PARBHANI (M.S.) INDIA

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Turmeric is one of the valuable spice crop. It is cultivated for various purpose. During cultivation, different fungi infect turmeric. Among these, soft rot is major one. Hence, the present investigation has been undertaken to study the soft rot. For this study the different methods used were dry seed examination, washing method, blotter paper method, agar method, rolled towel method, cut rhizome method, bore method, slice method, sand method and soil method. Among these methods, bore method and slice method is most suitable for the investigations of soft rot as well as other diseases.

Key words : Turmeric, Soft rot, *Pythium myriotylum*.

### INTRODUCTION

Turmeric (*Curcuma longa* Linn.) is an important spice crop cultivated for its underground rhizome. The rhizome of the turmeric contains a colouring pigment known as “curcumin” and volatile oil “tumerol”. The rhizome is valued for its medicinal property and it’s usefulness as dyeing agent to cotton, silk, etc. (Appaji Rao and Sarmal, 1962). It is an important condiment of spice exported from India. Turmeric is a perennial herb and the crop is propagated vegetatively from the rhizome. The diseases of economic importance viz. responsible for yield losses are foliage spots caused either by *Taphrina maculans* Butler, *Colletotrichum capsici* (Syd.) Butler and Bisby and rhizome rot induced by various fungal pathogens i.e., *Pythium myriotylum* Drech., *Sclerotium* spp. and *Fusarium* spp.

The rhizome borne fungi are responsible for low germinability to reduce yield and deteriorate quality of rhizome. *Colletotrichum capsici* is known to be carried through scales of the rhizome (Rangaswami, 1972). However, more information needs to be explored especially about the fungal component involved in inducing different types of rots. The cut surface of rhizomes provides open court for infection and especially the mode of storage of sets to be used for planting, which aggravates the fungal infection. The high water content of the propagative materials or rhizome in comparison with true seeds adds to their vulnerability to infection by soil borne mycotlora. By keeping this in view, the present investigation has been carried to find out suitable method to study soft rot of turmeric.

### MATERIALS AND METHODS

The turmeric rhizomes were subjected for detection of mycoflora by using the standard technique as recommended by ISTA (1966). The following methods were adopted to study thy soft rot of turmeric:-

- Dry seed examination
- Washing test
- Blotter paper method
- Agar method
- Rolled towel method
- Cut rhizome method
- Bore method
- Slice method
- Sand method
- Soil method

First method is dry seed examination. In this method, dry or infected rhizome sets of turmeric to ascertain the association impurities are classified as inert matter as per ISTA rules inclusive of discolouration, association of plant parts, spore masses, sclerotial bodies, etc. Examination was done with the help of low power binocular microscope.

In the second method i.e. washing test, the small pieces of infected rhizome of turmeric were taken and soaked in sufficient amount of sterile distilled water for 5 to 10 minutes and shaken over in a shaker machine. The liquid obtained was centrifused in a centrifuse machine at 2500 to 3000 rpm for 10 to 15 minutes. Thus, the two layers obtained of which sediment was examined under a compound microscope for identification of fungi.

Third method is blotter paper method, in which three layered blotter papers of equivalent size of Petridish were

\* Author for correspondence.