

Survival of *Myrothecium roridum* causing leaf spot of pigeonpea

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ABSTRACT

Pigeonpea [*Cajanus cajan* (L.) Millsp.] is one of the most important pulse crops (grain legume) in India. Due to the severity of *Myrothecium roridum* causing the leaf spot of pigeonpea an experiment was conducted to see the survivability of pathogen and the results indicated that isolated culture caused the disease upto 7 months when kept in laboratory condition while 9 months when kept buried in pots soil. It was also observed that in four months of storage, recovery of the pathogen is 100 per cent but there after recovery of the culture from stored debris declined shorphy.

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Key words : *Myrothecium roridum*, Pigeonpea, Leaf spot

INTRODUCTION

Pigeonpea [*Cajanus cajan* (L.) Millsp.] is one of the most important pulse crop (grain legume) in India, which is cultivated over an area of 3.5 million hectares with an average production of 2.26 million tonnes (Anonymous, 2007). In spite of the evolution of improved varieties and adoption of recommended package of practices, the average production per unit area is low. Among, the leaf spot several yield limiting factors, diseases are the major constraints in successful cultivation of this crop. Among them the disease caused by *Myrothecium roridum* Tode ex Fr. appeared to be severe in most of the pigeonpea fields. Hence, for managing this disease effectively, an investigation was carried out to see the survivability of the pathogen. For determining the survival of the pathogen through diseased plant debris an experiment was conducted under laboratory and field conditions.

MATERIALS AND METHODS

Naturally infected leaves were collected from pigeonpea fields and dried under aseptic condition in laboratory. These diseased samples were stored in tissue paper (paper bag) at room temperature (15-30°C) till the next crop season. Monthly isolations were taken from these infected samples to know the viability period of the

pathogen. Regular inoculation experiments were carried out to test the pathogenicity of the isolated fungus.

Diseased leaves wrapped in tissue paper were buried in the pot soil at the depth of 10 cm and kept in open (4-48°C). Regular isolations and pathogenicity tests in field were carried out at monthly intervals to see the longevity of the pathogen.

RESULTS AND DISCUSSION

The results of Table 1 revealed that the isolations made from plant debris, yielded the culture of *Myrothecium roridum* upto 7 months when kept in the laboratory conditions, while upto 9 months when kept buried in pot soil. It is also evident from the table that upto first four months of storage, the pathogen could be isolated from 100 per cent pieces of plant debris kept in either condition. But thereafter the recovery of the culture from plant debris pieces declined sharply with the increase in storage period.

The pathogenicity tests of isolated pathogen was carried out on pigeonpea plants at 15 days interval. Characteristic leaf spot symptoms appeared on inoculated plants after 72 hours of inoculation. The pathogen obtained from the isolations continued to retain its pathogenic capability, till it could be isolated from diseased plant debris used in the experiment. The pathogen was found to

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Table 1 : Survival of *M. roridum* in infected plant debris of pigeonpea under different storage conditions

Storage period (months)	Month of isolation	Laboratory conditions			Field conditions		
		No. of pieces used for isolation	No. of pieces yielding culture	% of pieces yielding culture	No. of pieces used for isolation	No. of pieces yielding culture	% of pieces yielding culture
1.	October	10	10	100	10	10	100
2.	November	10	10	100	10	10	100
3.	December	10	10	100	10	10	100
4.	January	10	10	100	10	10	100
5.	February	10	8	80	10	9	90
6.	March	10	7	70	10	8	80
7.	April	10	4	40	10	6	60
8.	May	10	0	0	10	4	40
9.	June	10	0	0	10	3	30
10.	July	10	0	0	10	0	0
11.	August	10	0	0	10	0	0

survive through diseased plant debris and remained viable for 7 – 9 months in infective stage, which served as source of inoculum. The pathogen remained viable and infective up to 7 months in plant debris kept under laboratory conditions while up to 9 months in plant debris kept under field conditions. These results are agreed with the findings of Mishra *et al.* (2000). Srivastava and Singh (1985) reported *Myrothecium roridum* surviving from 7–9 months on mungbean crop in soil. Munjal (1960) also reported viability of 40-50 per cent spores of *Myrothecium roridum* on cotton leaves lying on surface soil.

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