

SHORT COMMUNICATION

## First report of *Alternaria tenuissima* causing Alternaria leaf spot disease in Clusterbean

**NIDHI R. PATEL, MANISHA S. SHINDE AND  
A. CHATTOPADHYAY**



*J. Mycopathol. Res.* 61(4) : 611-613, 2023;  
ISSN 0971-3719

© Indian Mycological Society,  
Department of Botany,  
University of Calcutta,  
Kolkata 700 019, India

***This article is protected by copyright and all other rights under the jurisdiction of the Indian Mycological Society. The copy is provided to the author(s) for internal non-commercial research and educational purposes.***

---

## SHORT COMMUNICATION

# First report of *Alternaria tenuissima* causing Alternaria leaf spot disease in Clusterbean

---

NIDHI R. PATEL<sup>1</sup>, MANISHA S. SHINDE<sup>2\*</sup> AND A. CHATTOPADHYAY<sup>3</sup>

<sup>1</sup>C. P. College of Agriculture, S. D. Agricultural University, Sardarkrushinagar-385 506

<sup>2</sup>Polytechnic In Agriculture, SDAU, Deesa-385 535, Gujarat

<sup>3</sup>Pulse Research Station, S.D. Agricultural University, Sardarkrushinagar-385 506, Gujarat

---

Received : 05.07.2023

Accepted : 06.10.2023

Published : 25.12.2023

---

Cluster bean [*Cyamopsis tetragonoloba* (L.) Taub.] is an important arid legume crop. It is commonly called as Guar. Clusterbean is grown for different purposes viz., vegetable (pods), green fodder, green manure, straw, guar gum, seed production, cattle fodder and increase in soil fertility. During kharif-2022 a leaf spot disease was observed on clusterbean crop, after morphological identification it is identified as *Alternaria tenuissima*. This is the first report of *Alternaria tenuissima* causes Alternaria leaf spot on Clusterbean in Gujarat.

**Keywords:** Alternaria leaf spot, *Alternaria tenuissima*, Clusterbean

---

## INTRODUCTION

Cluster bean [*Cyamopsis tetragonoloba* (L.) Taub] popularly known as "Gaur" is an annual legume crop mostly grown under resource constrained conditions in arid and semi-arid regions. The crop is grown for different purposes such as vegetable, green manure and seed production. Cluster bean is an excellent soil-building crop concerning available nitrogen. It provides nutritional concentrate, fodder for cattle and adds to the fertility of soil by fixing considerable amount of atmospheric nitrogen. The common fungal diseases observed in Cluster bean are Alternaria leaf spot, Anthracnose, Curvularia leaf spot, charcoal rot/ damping off/ dry root rot/ root rot, powdery mildew and wilt. Among these, Alternaria blight is the most serious disease in Clusterbean growing areas of Gujarat. In early stages of infection, the water-soaked spots appear on leaf blade which later turn greyish to dark brown with concentric zonations, demarcated with light brown lines inside the spot on the under surface.

## MATERIALS AND METHODS

During kharif 2022, naturally infected diseased leaves of cluster bean plant showing the typical

characteristic symptoms of Alternaria leaf spot were collected from the Pulse Research station, SDAU, Sardarkrushinagar and screened as described by Narula *et al.* (1990). The diseased leaves showed small, dull to dark brown, circular or irregularly shaped spots having concentric ring or irregularly shaped spots having concentric ring were collected. For the identification of the pathogen these infected leaves were brought into laboratory for microscopic examination.

The isolated pathogen was subjected for single spore isolation to prepare pure culture of pathogen. After purification of the culture, cultural and morphological characters were studied for identification of the pathogen.

## RESULTS AND DISCUSSION

The fungus produced colonies that were regular and flat. Growth rate was 90 mm / 4-5 days. The periphery of the colony was brownish with grey to black center. Monoconidial isolations were used to establish a pure culture of the fungus. Septate mycelia having brown to dark brown color. Horizontal and vertical septations also present ranging from 4 to 5 and 2 to 3, respectively (Fig.1). Conidiophores were short, arising singly having length ranging from 6.00 to 15.00 mm and thickness ranging from 1 to 3 mm. Conidia varies from 10.00 to 15.00 mm in length

---

\*Correspondence: manisha5476@gmail.com

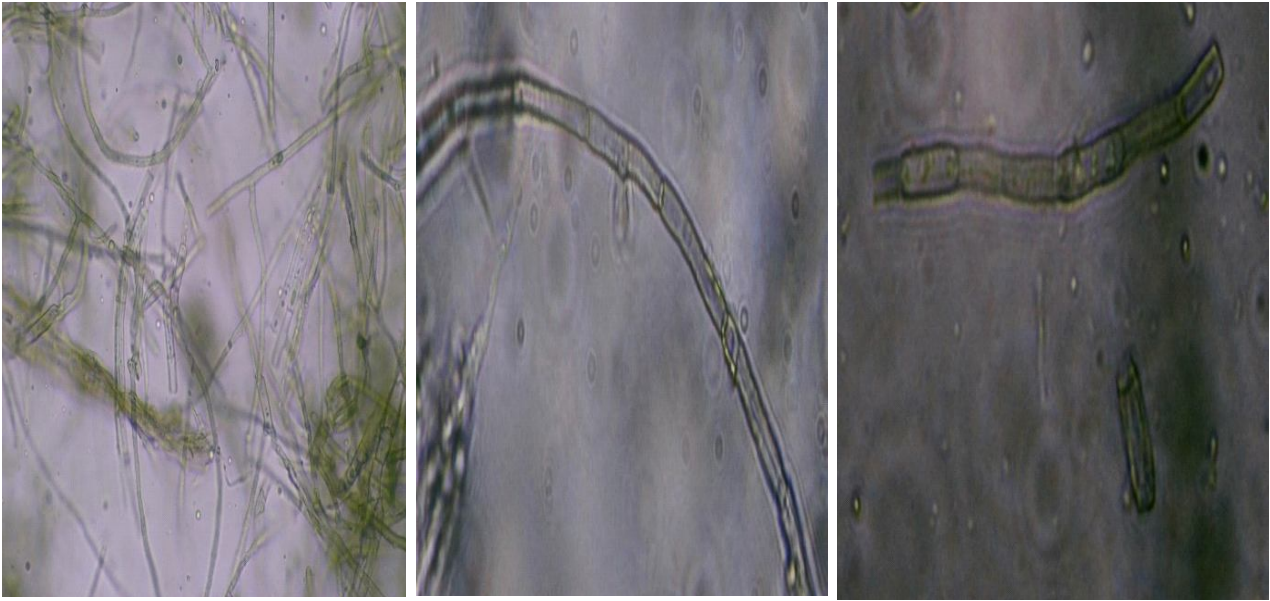


Fig. 1 : Septate Mycelium of *Alternaria tenuissima*

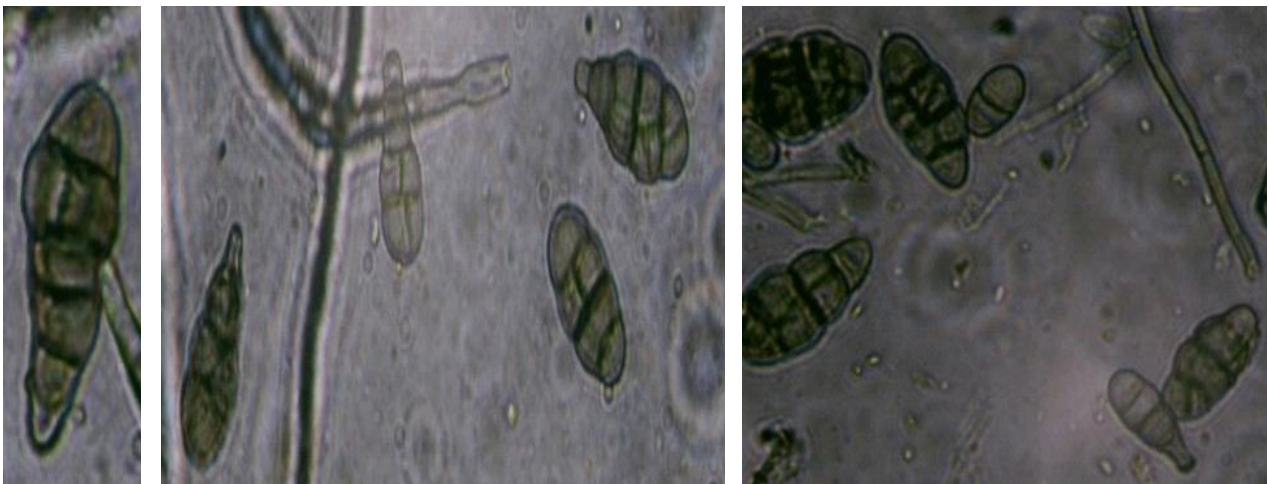


Fig.2 : Microphotographs of conidiophores and conidia of *Alternaria tenuissima*



Fig. 3 :: Infected leaves of Clusterbean showing leaf spot

and 5.00 to 10.00 mm in width having very short beak (Fig.2). On the basis of morphological and cultural characters, the fungus was identified as *Alternaria tenuissima*. The pure culture was also sent for identification and confirmation to Indian Type Culture Collection, IARI., New Delhi-110 012 which was identified as *Alternaria tenuissima* (ITCC accession No.-11,873.23).

The results of present investigation are first time reported in Gujarat. Symptoms of the disease have been presented in Fig. 3. *Alternaria tenuissima* has been reported to cause Alternaria blight on pigeonpea (Sharma *et al.* 2012), Indian bean (Naik, 2014) etc. Radchenko *et al.* (2019) also reported Alternaria leaf blight of Clusterbean. Infection of Clusterbean by *Alternaria tenuissima* causing Alternaria leaf spot disease is the first report of this disease in Gujarat.

## REFERENCES

- Naik, B. M. 2014. Investigation on leaf spot disease of Indian bean (*Dolichos lablab* L.) caused by *Alternaria tenuissima* (Fries) Willshire under south gujarat conditions. M.Sc(Agri.) Thesis Submitted to Navsari Agricultural University, Navsari.
- Narula, P.N., Farooqui, O., Singh, S.P. 1990. Screening pigeonpea varieties against leaf blight disease caused by *Alternaria tenuissima*. *Ind. J. Genet. Pl. Breed.* **50**:171-174.
- Sharma, M., Ghosh, R., Mangla Saxena. K. B. and Pande, S. (2012). *Alternaria tenuissima* causing Alternaria blight on pigeonpea [*Cajanus cajan* (L.) Millsp.] in India. *Plant Dis.* **96**: 907- 908.
- Radchenko, A.A., Abdullaev, R.A., Alpatieva, N.V., Putina, O.V., Gasich, E.L. 2019. Alternaria leaf blight of Clusterbean. *Vavilov J. Genet. Breeding* **23**:641-649.