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***Alternaria tenuissima* Causing Alternaria Blight on Pigeonpea [*Cajanus cajan* (L.) Millsp.] in India**

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Pigeonpea [*Cajanus cajan* (L.) Millsp.] is a major grain legume of the tropics and subtropics worldwide. In India, pigeonpea is the third most important food legume after chickpea and field pea. Blight symptoms on pigeonpea were observed in alarming proportion during 2009-2011 crop seasons in Andhra Pradesh state in India. The disease incidence ranged between 20-80% irrespective of cultivars sown. The infected plants in the field showed symptoms on all the aerial parts of the plant (leaves, stems, buds and pods) irrespective of age of the plant and leaves. Symptoms on leaves were small, circular, necrotic spots that develop quickly forming typical concentric rings (Kannaiyan and Nene (1977). Later, these spots coalesce and cause blighting of leaves. The spots were initially light brown and later turned dark brown. On stems, spots were sunken, with concentric rings. In severe infection, defoliation and drying of infected leaves, branches and flower buds was observed. The fungus was successfully isolated from all the infected plant parts (leaves, stem, buds and pods) on potato dextrose agar (PDA) medium. After 4 to 5 days of incubation at $28\pm 1^{\circ}\text{C}$ with a 12 h photoperiod, the fungus produced colonies which were regular and flat. The periphery of the colony was olive green with a black centre. Monoconidial isolations were used to establish pure culture of the fungus. The conidiophores were short, arising singly measuring 8.86 mm in length and were 2.97 mm thick. The size of the conidia varied from 15.78 to 28.70 mm in length and 8.03 to 13.47 mm in width. Very small beak (1.6 to 3.2 mm) or no beak was observed. Horizontal and vertical septations of conidia varied from 4 to 6 and 2 to 4 respectively. The

pathogenicity test was conducted on 8-10 day old pigeonpea plants of cultivar ICPL 87119 by spraying with a conidial suspension (5×10^5 conidia per ml). Inoculated plants were covered with polythene bags and kept in greenhouse at $28 \pm 1^\circ\text{C}$ with 12 h photoperiod. After 48 hrs the polythene bags were removed. Ten days after inoculation, symptoms were similar to those observed in fields. This experiment was conducted twice with two independent sets of plants. No symptoms were observed in water inoculated control plants. The fungus was reisolated from the inoculated plants. Based on the morphological characteristics, the pathogen was tentatively identified as *Alternaria tenuissima*. The identification was further confirmed using the rDNA and internal transcribed spacer (ITS) primer. The ITS region of rDNA was amplified using ITS 1 and ITS 4 primers. Both orientations sequenced amplicons (481bp) were submitted to Genebank (Accession no. JQ074094). A BLASTn search revealed 99% similarity to *Alternaria tenuissima* (Accession no. HQ343444). This is the first report of molecular identification of *Alternaria tenuissima* causing Alternaria blight in pigeonpea in India.

References

Kannaiyan J and Nene YL. 1977. Alternaria leaf spot of pigeonpea. Tropical Grain Legume Bulletin 9: 34.