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First Report of *Curvularia lunata* Associated with Leaf Spot of *Amaranthus spinosus*

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A fungal leaf spot disease symptom was observed on *Amaranthus spinosus* Linn. The spots were grayish brown, predominantly on margins of leaves. Disease incidence was ranged upto 60%. The fungus after purification identified as *Curvularia lunata*. This is the first report of *C. lunata* pathogenic on *A. spinosus*.

Amaranthus spinosus Linn. (*Amaranthaceae*) commonly called as Pig weed, is an annual herb found throughout India and also in many tropical countries. The chemical analysis of this plant show that it is high in protein (30-32%) with lysine constituting as much as 5.9% which is equal to the amount found in soybean (Adewolu and Adamson, 2011) and having good antioxidant value (Odukoya *et al.*, 2007). Ethnomedicinally, the plant is used as a source to treat several disorders. The leaves are used as a laxative and applied as an emollient poultice to abscesses, boils and burns. The juice of the root is used to treat fevers, urinary troubles, diarrhoea and dysentery (Kirtikar and Basu, 1999).

During a survey at Chittorgarh district of Rajsathan after post rainy season, leaves of *Amaranthus* plants were found to be covered by grayish brown lesions, predominantly on margins of leaves (Fig. 1). Field disease incidence ranged upto 60% and severity from no disease to highly affected. To identify the pathogen, infected margins of diseased leaf samples were surface sterilized with a 70% alcohol swab, cut into small blocks (1.5×1.5×1.5 cm), soaked in 1% sodium hypochlorite (NaOCl) for 3 min and rinsed in several changes of sterile distilled water (each 1 min). The surface-sterilized tissues were placed onto Potato Dextrose Agar (PDA) and incubated under alternating 12 h daylight and black light for 7 days. A fungus which was consistently isolated was identified as *Curvularia* sp. Colony colour on PDA was black. Conidiophores were erect, unbranched, septate, flexuose in the apical part, with flat, dark brown scars. Conidia smooth-walled, olivaceous brown, end cells somewhat paler, conidia obovoidal to broadly clavate, curved at the subterminal cell, 20-30×8-12 µm, 3-septate. On the basis of morphological characteristics (Ellis, 1971) the isolated fungus was identified as *Curvularia lunata* (Wakk.) Boedijn. Fungal Identification Service, Mycology and Plant Pathology Group, Agharkar Research Institute, Pune, India also confirmed the identity (Accession No. 1030). To complete Koch's postulates, ten plants were inoculated by spraying conidial suspensions (1×10^6 conidia mL⁻¹). Controls were treated with sterile distilled water. All inoculated plants and controls were covered with a plastic bag for 48 h. Control plants remained symptom-free whereas lesions similar to field symptoms were observed on all inoculated plants within 7 days.



Fig. 1: Leaves of *Amaranthus spinosus* infected with leaf spot disease

C. lunata is ubiquitous and is known to be associated with several plant diseases (Amusa *et al.*, 2005; Ehsan-ul-Haq *et al.*, 1998; Jha *et al.*, 1988). This is the first report of *C. lunata* pathogenic on *Amaranthus spinosus* from India and worldwide.

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