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# FIRST RECORD OF *CERCOSPORA CITRULLINA* LEAF SPOT ON *LAGENARIA SICERARIA* IN PAKISTAN

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## ABSTRACT

A leaf spot disease was observed on bottle ground [*Lagenaria siceraria* (Mol.) Standl.] from September to November 2011 in Lahore and Shiekhupura regions. Disease was characterized by irregular to obcircular, medium brown spots with distinct dark brown border on both sides of the leaves. Conidiophores were 2-30 in a divergent fascicle, simple, multiseptate, golden brown, however light paler to subhyaline at the apex, straight to slightly curved 3-5 × 50-300µm, geniculate and unbranched. Conidia were solitary, hyaline, filiform, 1-16 septate, non-constricted at the septa, 2.5-4×20–270µm. The causal organism was isolated and identified as *Cercospora citrullina* on the basis of pathology and morphological characteristics. It is the first report of *C. citrullina* on *L. siceraria* from Lahore, Pakistan.

**Key words:** Cercospora spot, *Lagenaria*, hyaline conidia, leaf spot

Bottle-gourd [*Lagenaria siceraria* (Mol.) Standl.] is cultivated throughout Pakistan all the year round as a popular domestic vegetable called Lauki and Kaddu. During September to November 2011, a leaf spot disease was noted in the *L. siceraria* fields in Lahore and Shiekhupura districts, Pakistan. Disease incidence was up to 30% in inspected fields. Disease symptoms started spots characterized as small circular to irregular, 0.5-7 mm wide, brown with yellow halo on both sides of the leaf (Fig 1A-E). In later stages, the whole leaves became nectiotic and droped. Disease spots with white center and brown margin were also observed on petiol and main stem (Fig. 1F).

Microscopic study of the whitish-grey lesions revealed the presence of divergent fascicle of conidiophores, 2-30 conidiophores in a fascicle, simple, straight to slightly bent or curved, multiseptate, golden brown, however light paler to subhyaline at the apex, straight 3-5×50-300µm, rarely upto 5×500µm, geniculate and unbranched, conidial scars conspicuously thickened (Fig.G). Conidia were solitary, hyaline, filiform, straight to slightly curved with obtuse to subacute at the apex and subtruncate bases, 1-16 septate, non-constricted at the septa, and 2.5-4×20–270 µm in size (Fig. 1H). The causal organism was identified as *Cercospora citrullina* Cooke on the basis of morphological characteristics (Chupp, 1954; Crous and Braun, 2003).

Fresh conidia of *C. citrullina* from infected leaf were cultured on 2% Malt Extract Agar (MEA) and incubated at 25$^{o}$C for ten days. The average diameters of 3 colonies were 6.8cm, dense dark mat of mycelium with an outer gray-green ring (Fig.1I). This strain has been deposited (FCBP1210) in FCBP (First Fungal Culture Bank of Pakistan) at Institute of Agricultural Sciences, University of the Punjab, Lahore, Pakistan.

Pathogenicity tests were conducted on 6 week-old bottle-gourd vines, by inocultion of healthy leaves with conidia from infected leaf. A sterile brush was used to transfer conidia from the affected leaves to fully expanded leaves of five healthy. For control, sterile brush was touched on five healthy vines leaves. Small circular lesions (1-2 mm wide) were observed on inoculated leaves 12 days after treatment and changed into lesions with same characteristic symptoms as those on naturally infected leaves. No foliar symptoms developed on any of the control plants. The pathogen was reisolated from infected leaves. Many other species of genus *Cercospora* have also been report form different economical important crops from Pakistan (Baloach *et al*., 1978; Javed, 2000; Saleem and Mirza, 1977). *Cercospora citrullina* leaf spot has been reported on wide range of cucurbits (i.e., *Citrullus lannatus* and *Cucurbita* sp.) and other plant species like *Benincasa hispida* and *Sechium edule* from Brazil, India, Thailand and Netherlands (Rngaswami and Chandrasekaran, 1962; Lucy and Rangaswami, 1968; Petcharat and Kanjanamaneesathian, 1989; Halfeld-Vieira *et al.,* 2004; Vossen *et al.,* 2004). This fungus apparently over seasons in crop debris and on weeds of the Cucurbitaceae (Chupp & Sherf, 1960).

Previously, few diseases on bottle gourd (*L. siceraria*) likewise, powdery mildew, downy mildew, fruit rot, antharacnose, root rot, root knot, insect pest and viral diseases has been reported from Pakistan (Kamal & Moghal, 1968; Maholay, 1989; Hafiz, 1996; Zitter *et al.*, 1996). A record of *C. citrullina* was reported on *Momordica charantia* from west Pakistan (Kausar, 1960).

However, this is the first report of *Cercospora* leaf spot on bottle ground caused by *C. citrullina* in Pakistan.

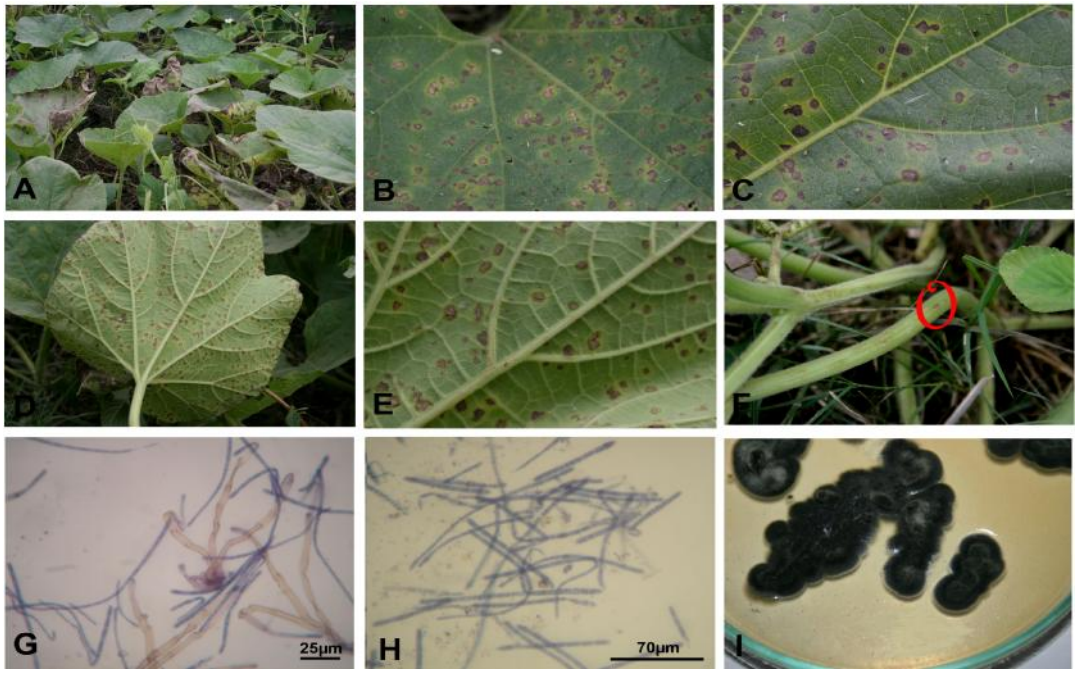


**Figure 1 (A-I). Cercospora leaf spot on bottle ground. (A) Leaf spot infection on bottle ground in field, (B-C) disease spots with yellow halo on upper side of leaf, (D-E) leaf spot on lower side of leaf, (F) diseased spot on stem, (G) geniculate conidiphore, (I) filiform conidia**

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