A new record of leaf spot of *Cycas revoluta* in Kumaun Himalaya in Uttarakhand, India

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Abstract: The hyphomycete species was identified for the first time in India as a pathogen of *Cycas revoluta* causing leaf spots. The infestation pattern is shown.

Zusammenfassung: Der Hyphomycet *Alternaria alternata* wurde erstmals in Indien als Erreger von Blattflecken auf *Cycas revoluta* identifiziert. Der Befall wird vorgestellt.

Cycas revoluta, a common Indian species, is a so called 'living fossil' on account of its primitive characteristics. It resembles in its appearance tree ferns or palms and is widely cultivated as an ornamental plant in India. The foliage leaves are large, compound and pinnately divided into many leaflets. The leaflets are extensively used for floral decoration (VASHISHTA & al. 2006). Due to thick cuticle on the leaflets, they are supposed to be resistent to pathogenic infections to bacteria and fungi to some extent, but during the present investigation the leaves of *Cycas revoluta* were found to be infected by *Alternaria alternata* FR. KEISSLER.

The fungus attacks only the foliar leaflets. Leaf spots are mostly light brown. Older lesions are circular to irregular and reach a diameter of about 1–4 mm. In later stages the central portion fall off giving a shot hole like appearance (Fig. 1 a, b).

On culture medium (potato dextrose agar medium) the fungal hyphae are subhyaline to olivaceous, branched, septate, greenish grey to black in mass. Conidia are borne in acropetal chains, muriform and measure $20-38 \times 9-15 \mu m$ (Fig. 1 c, d). The morphological characters of the fungus were found to agree with those of *Alternaria alternata* and the identification was confirmed by the National Center of Fungal Taxonomy (Qurs. Id. No. 5766.13). *Alternaria alternata* is a common seed borne pathogen that causes leaf spot and blight diseases in many crops (YU & al. 1982, CHANDRA & TANDON 1965, VERMA & al. 2007, UPADHYAYA & al. 2008).

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Fig. 1. *Cycas revoluta, above* leaves infected with *Alternaria alternata; below* microphotographs of *A. alternata* showing conidiophores and conidia, bar for conidia 10 µm

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