First report of yellow leaf spot caused by *Corynespora cassiicola* on giloy in India

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During the years 2015–16 in August–September months, yellow spot symptoms on giloy (*Tinospora cordifolia*) were observed at ICAR-DMAPR, Anand, Gujarat. Initial infection showed minute yellow spots on upper surface and discolouration on the corresponding lower surface of leaves. Then the spots coalesced and turned into chlorotic and brownish necrotic spots, and lead to premature defoliation. The fungal structures aggregated as whitish to greyish powdery masses at the lower surface of the leaves. Infected leaves were surface sterilized with 1 % sodium hypochlorite (NaOCl) for 2 min, rinsed in sterile distilled water twice and dried with sterilized paper. Small bits of infected leaves were placed on potato dextrose agar (PDA) and incubated at 25 ± 2 °C for 7–8 days. The fungal colonies effused greyish to blackish tinge with hyaline, septate, simple flexuous conidiophores, aroused in clusters from the upper cells of stroma of $50\text{--}208 \times 6\text{--}12$ µm with distinct but thin scars. Conidia were hyaline, straight to slightly curved, obclavate with truncate to thick ended base, 128.42 µm (25 to 242) in length and 17.74 µm (7 to 21 µm) in width with different shape, typically, as of *Corynespora cassiicola* (Fulmer et al. 2012). Further, the internal transcribed spacer (ITS) region was amplified using the ITS1/ITS4 primers (White et al. 1990). The sequences from the fungus (isolate ATC-1), showed >99% identity with homologue region of *Corynespora cassiicola* (MG976659.1, KU593529.1, etc.), submitted in NCBI GenBank under accession No. MK027366.1. To establish the pathogenicity, a 10-day-old culture was used for preparation of inoculum suspension, sprayed on three mature leaves and replicated thrice along with control, sprayed with sterilized water. The plants were

kept separately at 25 ± 5 °C in the customized humid chambers for initial 48 h. After 10–12 days of the inoculation, developed symptoms were similar to those of naturally infected plants. Further, re-isolation of identical pathogen was established from the inoculated plants. Earlier, *Corynespora calicioidae* had been reported on giloy in India (Kapoor and Munjal 1968); however, to the best of our knowledge, this is the first report of *C. cassiicola* causing yellow leaf spot disease of giloy.

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Declarations

Ethical approval This article does not contain any studies with human participants or animals performed by any of the authors.

Conflict of interest The authors declare that they have no conflict of interest about this manuscript and research.

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