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DISEASE NOTE

First report of downy mildew caused by *Pseudoperonospora cubensis* on *Luffa cylindrica* in India

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Luffa cylindrica (L.) syn. *Luffa aegyptiaca*, commonly called as sponge gourd, vegetable sponge or bath sponge gourd, is a member of Cucurbitaceae family. In India *L. cylindrica* was commonly cultivated in home gardens and young fruits were used as a vegetable (Partap et al. 2012). From July to December in 2014 and 2015, several plants of *L. cylindrica* exhibiting yellow angular spots on upper side and greyish-to-black efflorescence on lower side of the leaves were observed in different cultivation fields of Odisha state in India. Infected leaves were collected from fields and the abaxial surface of the symptomatic portion was observed under the microscope. A fungus-like was consistently observed from symptomatic portion which showed hyaline, monopodially branched with 3–5 orders, straight, slightly swollen at the bases like sporangiophores with 160–400 μm length and 4.6–8 μm width. Each sporangium was found to be lemon shaped, ellipsoidal, black and measured 20.1 to 40.3 μm in length and 14.2 to 25.4 μm in width. Based on the microscopic measurements and morphological characteristics the fungus was identified as *Pseudoperonospora cubensis* (Waterhouse and Brothers 1981). To confirm the identity of the causal agent, the internal transcribed spacer (ITS) region of ribosomal DNA of the fungus was amplified and sequenced (Göker et al. 2009). The ITS sequence showed 100% homology with *P. cubensis* nucleotide sequences (GenBank accession Nos. JF304669, JF304671 and AY198306) at NCBI database and was submitted to GenBank (KU041747). Pathogenicity tests were performed by spray inoculation of sporangial suspension (5×10^4 spores ml^{-1}) of *P. cubensis* on four-week-old plants of *L. cylindrica* while control plants were sprayed with sterile water. All plantlets were maintained under glass house at 22 °C (>80% relative humidity) with a 12 h light/dark photoperiod. After 5–7 days, all the inoculated plantlets showed the same symptoms as those observed on naturally infected plants while controls remained symptomless. To our knowledge, this is the first report of *P. cubensis* on *L. cylindrica* in India.

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