



# ***Curvularia eragrostidis*, a new threat to large cardamom (*Amomum subulatum* Roxb.) causing leaf blight in Sikkim**

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Large cardamom (*Amomum subulatum* Roxb.) is now affected by several diseases caused by both viruses and fungi. At present, leaf blight is considered a major threat to cardamom cultivation in Sikkim. During the past two decades, cultivation of the crop in this region has dropped by almost 60%. Hence, to quantify the severity of leaf blight damage and identification of the causal organism for the disease, a survey was conducted from May to August 2017 in different large cardamom growing regions of Sikkim. During this survey, a typical symptom of leaf blight was observed on cardamom leaves in many locations. The leaves with blights were collected, surface sterilized, and inoculated on potato dextrose agar (PDA). The pathogen was isolated as pure culture, and on the basis of morphological and microscopic characteristics, the fungus was identified species of *Curvularia*. Molecular characterization of the fungal isolate with ITS-rDNA partial gene amplification using universal primers (ITS4 and ITS5), showed 100% similarity with *Curvularia eragrostidis* (family: Pleosporaceae). The fungal isolate and nucleotide sequence was deposited in National Fungal Culture Collection of India (NFCCI), Pune and NCBI with accession numbers NFCCI 4541 and MN710527, respectively. This is the first report on the occurrence of *C. eragrostidis* pathogen causing leaf blight of large cardamom grown in Sikkim.

**Keywords.** *Curvularia eragrostidis*; large cardamom; leaf blight; Sikkim

## **1. Introduction**

Large cardamom (*Amomum subulatum* Roxb.; family Zingiberaceae; order Scitaminae) is a principal cash crop cultivated in the north-eastern state of Sikkim and Darjeeling district of West Bengal. The crop has played a vital role in the economy of Sikkim and other large cardamom growing regions in the country for its exporting and foreign exchange earning potentiality. The crop grows in all the four districts of Sikkim ranging with different altitude from 800–3000 m amsl. Sikkim contributes maximum, i.e. 85%, of large cardamom production in India. It is also cultivated in parts of Uttarakhand and some other north-eastern states like Arunachal Pradesh, Manipur, Nagaland,

Mizoram and Assam (Partap *et al.* 2014). Large cardamom cultivation is the source of income and livelihood of almost 88% population of Sikkim, and income from this particular crop is significantly higher than other livelihood options in this state. However, for the past 15–16 years, cultivation of the crop in the region has unfortunately dropped by almost 60% (Sharma *et al.* 2000). Experts are of opinion that there are multiple factors responsible for this drastic decrease in the production in the region, like climate change, alteration in cultivation practices, inadequate pollination system, incidence of pests and diseases (viral and fungal), etc. (Srivastava and Verma 1989; Saju *et al.* 2013; Gopi *et al.* 2018; Gurung and Bag 2018).