

First report of powdery mildew of *Begonia cucullata* var. *hookeri* in India

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Abstract. In February 2008, powdery mildew symptoms were observed on *Begonia cucullata* var. *hookeri*. Based on the morphological characters, the pathogen was identified as anamorphic *Erysiphe begoniicola*. This is the first report of this organism causing powdery mildew on *B. cucullata* var. *hookeri* in Meghalaya, India.

Begonia cucullata var. *hookeri* (= *Begonia semperflorens*), also known as perpetual begonia, belongs to family Begoniaceae. It is commonly grown as an ornamental plant in India.

Diseased leaves of *B. cucullata* var. *hookeri* collected from Shillong, Meghalaya (North East India) were found to be heavily infected by powdery mildew during February 2008. Many plants were found to be infected during a survey in Shillong. Disease symptoms included grayish white irregular patches consisting of epiphytic mycelia and conidia on both surfaces of the leaves (Fig. 1). A voucher specimen has been deposited in IMI herbarium collection, UK (IMI 396396).

Hyphae were up to 4–5 µm wide with multilobed appressoria. Conidia were harvested by dislodging them from infected tissue onto a strip of clear tape, using a camelhair brush. The tapes were mounted on microscope slides (Correll *et al.* 1987). Conidiophores were straight, containing a foot cell (42.6–58.4 × 10.2–12.4 µm) followed by two or



Fig. 1. Symptoms of powdery mildew on *Begonia* leaf.



Fig. 2. *Pseudoidium* configuration of conidial ontogeny (IMI 396396). Bar = 20 µm.



Fig. 3. Conidia of *Erysiphe begoniicola* on *Begonia* (IMI 396396). Bar = 20 µm.

three short cells; conidia were cylindrical in shape ($30.6\text{--}46.2 \times 15.2\text{--}18.3 \mu\text{m}$) and produced singly (Figs 2, 3). Fibrosin bodies were absent. Shoulder germination of conidia was also observed (Fig. 4). Based on these morphological characters, the fungus was identified as a powdery mildew anamorph belonging to *Erysiphe begoniicola* (= *Microsphaera begoniae*) (Braun 1987). No perfect stage (chasmothecium) was



Fig. 4. Germinating conidium of *Erysiphe begoniicola* on *Begonia* (IMI 396396). Bar = $20 \mu\text{m}$.

found to be associated with this fungus. Pathogenicity was confirmed by dusting conidia onto healthy potted plants of *B. cucullata* var. *hookeri*; non-inoculated plants served as controls. Inoculated plants developed symptoms after a week, whereas control plants remained healthy.

Erysiphe (section *Erysiphe*, *Microsphaera*) spp. and *Golovinomyces* spp. have been previously reported from Europe (many countries), China and Australia (Kiss 1994; Farr *et al.* 2005). To our knowledge, this is the first record of powdery mildew caused by *E. begoniicola* on *B. cucullata* var. *hookeri* in India.

Acknowledgements

The authors would like to thank Prof. Dr Uwe Braun for providing the literature.

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Manuscript received 29 April 2008, accepted 17 June 2008