



First report of powdery mildew on *Solenostemon*

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Solenostemon scutellarioides (Lamiaceae), commonly known as coleus, is a popular ornamental houseplant in the UK, although it may also be grown as a summer bedding plant. In 2013 some *Solenostemon* plants, particularly purple/red leaved cultivars, growing in the RHS Garden, Wisley, UK, were observed as having spots and profuse superficial white mycelium on both leaf surfaces (Figs. 1, 2). On examination the fungus was found to be a powdery mildew for which there are no records of an association on this host (Braun & Cook, 2012; Farr & Rossman, 2014).

Mycelia were abundant on the plants inspected, but no chasmothecia were present. Appressoria, mostly slightly nipple shaped, were observed. Conidiophores were erect, arising from the upper surface of the hyphal mother cell (Fig. 3) with predominantly a single large foot cell 41.2-141.2 μm x 7.2-14.8 μm (85.4 x 10.6 μm) (Fig. 4), with a constriction at the basal septum (Fig. 4). The foot cell supported 1-3 short cells, 10.0-26.0 μm x 9.6-13.6 μm (17.8 x 11.6 μm) that bore catenescence conidia. Occasionally the foot cell of the conidiophore appeared split by a septum into two cells of approximately equal size before the 1-3 short cells. Conidia were predominantly doliiform, but a few were cylindrical, 26.5-35.5 μm x 15.1-19.2 μm (30.8 x 17.2 μm), with a length:width ratio 1.6-2.0 (Fig. 5).

The DNA was sequenced and the ITS region was analysed as described by Cunnington *et al.* (2004), and deposited in GenBank (Accession No. KJ506139). The sequence had 99% similarity with *Golovinomyces*

biocellatus (AB307675), representing a specimen voucher held in the Mie University Mycological Herbarium. Foot cell and conidiophore measurements vary slightly from the description by Braun (1987) for *G. biocellatus*, but are broadly in line with the variation reported by Dugan (2011). *Golovinomyces biocellatus* has been recorded infecting other plants in the Lamiaceae but to our knowledge this is the first record of powdery mildew on *Solenostemon*.

References

- Braun U, 1987. A monograph of the Erysiphales (powdery mildews). *Beiheft zur Nova Hedwigia* 89. Berlin-Stuttgart, Germany: J. Cramer.
- Braun U, Cook RTA, 2012. Taxonomic Manual of the Erysiphales (Powdery Mildews). *CBS Biodiversity Series* 11. Utrecht, Netherlands: CBS-KNAW Fungal Biodiversity Centre.
- Cunnington JH, Lawrie AC, Pascoe IG, 2004. Unexpected ribosomal DNA internal transcribed spacer sequence variation within *Erysiphe aquilegiae sensu lato*. *Fungal Diversity* 16, 1-10.
- Dugan FM, 2011. Three new host-fungus records for *Golovinomyces* species in Montana and Washington. *North American Fungi* 6, 1-7. <http://dx.doi.org/10.2509/naf2011.006.003>
- Farr DF, Rossman AY, 2014. Fungal Databases, Systematic Mycology and Microbiology Laboratory, ARS, USDA. Retrieved February 10, 2014, from <http://nt.ars-grin.gov/fungaldatabases/>



Figure 1



Figure 2

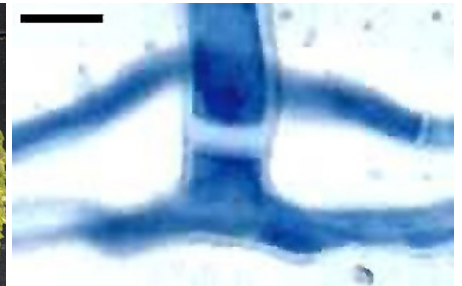


Figure 3



Figure 4



Figure 5

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