



First confirmed report of powdery mildew (*Erysiphe* sp.) on *Plumeria pudica* in the United States

S.N. Suarez¹, G. Sanahuja^{1*}, P. Lopez¹ and D.L. Caldwell²

¹ Tropical Research & Education Center, University of Florida, Homestead, Florida, 33031, USA; ² Collier County Extension Office, University of Florida, Naples, Florida, 34120, USA

*E-mail: g.sanahuja@ufl.edu

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Plumeria pudica (Apocynaceae), commonly known as bridal bouquet, is a flowering ornamental plant related to the common frangipani, *P. rubra*. A native to Columbia, Panama and Venezuela, *P. pudica* has striking white flowers and a long blooming period which have made it a popular landscape plant in south Florida and the Caribbean.

In January 2017, *P. pudica* leaves from a residential area in Naples, Florida, showing white powdery mycelial growth on the upper leaf surfaces were submitted to the Florida Extension Plant Diagnostic Clinic. Conidia, measuring 35 to 45 ($36.7 \pm 1.01 \mu\text{m}$) \times 15 to 25 μm ($19.47 \pm 0.49 \mu\text{m}$) (n = 19), were borne on erect, cylindrical conidiophores containing a foot-cell usually equal to or shorter than the one to two cells above it. No chasmothecia were found. Based on these morphological characteristics, the pathogen was identified as an anamorph of the genus *Erysiphe*, with a *Pseudoidium* type of conidial formation, *sensu* Cook *et al.* (1997). To confirm this identification, DNA was extracted and the complete internal transcribed spacer (ITS) regions ITS1 and ITS4 of an isolate (GenBank Accession No. MF092833) were sequenced. The sequences showed 98% identity with the ITS sequence of *E. elevata* isolated from *Catalpa bignonioides* (southern catalpa) in Korea (KF840721; Cho *et al.*, 2014) and in the UK (AY587014; Cook *et al.*, 2000). *Erysiphe elevata* has previously been reported in North America causing powdery mildew on *C. bignonioides* which is a member of the family Bignoniaceae (Ale-Agha *et al.*, 2004). However, in the absence of chasmothecia this pathogen will be referred to as *Erysiphe* sp.

A pathogenicity test was conducted by pressing a leaf of *P. pudica* with heavy sporulation onto leaves of three healthy plants of the same species. Plants were kept under 60% shade at an average temperature of 24°C and 76% relative humidity. A non-infected leaf pressed onto leaves of a healthy plant served as the control. Inoculated leaves developed symptoms of the

pathogen after 12 days, while the control plants remained disease-free.

Although there are anecdotal references to powdery mildew on *P. rubra*, to our knowledge, this is the first confirmed report of an *Erysiphe* sp infecting *P. pudica* in the United States.

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Figure 1



Figure 2



Figure 3

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