

## First confirmed record of *Golovinomyces neosalviae* from Argentina

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In the 1990s, powdery mildew was collected on *Salvia officinalis* in Argentina and assigned to *Erysiphe biocellata* (= *Golovinomyces biocellatus*). The material concerned has been re-examined and identified as *Golovinomyces neosalviae*. This is the first confirmed record of this species from Argentina and possibly the first South American record at all.

**Zusammenfassung:** Braun, U. & Havrylenko, M. 2018: Erster bestätigter Fund von *Golovinomyces neosalviae* aus Argentinien. *Schlechtendalia* **34**: 101–102.

In den 1990er Jahren wurde in Argentinien Echter Mehltau auf *Salvia officinalis* gefunden und zu *Erysiphe biocellata* (= *Golovinomyces biocellatus*) gestellt. Das Material wurde neu untersucht und als *Golovinomyces neosalviae* identifiziert. Dabei handelt es sich um den ersten bestätigten Nachweis dieser Art für Argentinien und wahrscheinlich auch für Südamerika überhaupt.

**Key words:** Powdery mildew, *Golovinomyces*, *Salvia officinalis*, new record, South America.

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*Salvia officinalis*, native to the Mediterranean region, is a popular, frequently cultivated plant, used as ornamental garden plant and for culinary and medical purposes (Clebsch & Barner 2002). Powdery mildew on this host was previously assigned to *Erysiphe biocellata* Ehrenb. (= *Golovinomyces biocellatus* (Ehrenb.) Heluta) or *Erysiphe salviae* (Jacz.) S. Blumer (Amano 1986, Braun 1995, Braun & Cook 2012). Scholler et al. (2016) published a comprehensive revision of *Golovinomyces biocellatus* s. lat. and split it into *G. biocellatus* s. str., *G. monardae* (G.S. Nagy) M. Scholler, U. Braun & Anke Schmidt, *G. salviae* (Jacz.) M. Scholler, U. Braun & Anke Schmidt, and the new species *G. neosalviae* M. Scholler, U. Braun & Anke Schmidt with *Salvia officinalis* as type host and *S. officinalis* subsp. *lavandulifolia* and *S. fruticosa* as additional hosts. *G. neosalviae* is genetically clearly separated from *G. salviae* and morphologically readily distinguishable by its characteristic, quite distinct conidiophores, which are very long, often with a single or several short basal cells followed by a much longer cell. The basal septum is almost always distinctly elevated above the junction with the supporting hypha. Götz et al. (2018) described a new unusual branching pattern in conidiophores of *G. neosalviae*. A Mediterranean origin of this species can be postulated. Scholler et al. (2016) examined collections on *Salvia officinalis* from Germany and Switzerland and included several German collections in phylogenetic analyses. *Golovinomyces* on *Salvia officinalis* has been recorded from several European countries [Bulgaria, Czech Republic, France, Hungary, Italy, Switzerland (Amano 1986, Braun 1995, Bolay 2005), Croatia (Radisek et al. 2012)]. *Golovinomyces* infections on *S. officinalis* in Germany are undoubtedly not rare (Jage et al. 2010, Scholler et al. 2016, Götz et al. 2018). Non-European powdery mildew records on *S. officinalis* are from Argentina (Havrylenko 1997, Cabrera et al. 2010), New Zealand (Amano 1986) and South Africa (Gorter 1993). Voytyuk et al. (2009) reported *Golovinomyces biocellatus* on *Salvia fruticosa* from Israel. Most collections of *Golovinomyces* on *S. officinalis* and *S. fruticosa* seem to belong to *G. neosalviae*, but they need to be re-examined and confirmed.

Havrylenko (1997: 94–96, fig. 15 A–D) described and illustrated *Erysiphe* aff. *biocellata* on *Salvia officinalis* from Argentina characterized by having conidiophores with long foot-cells, up to 140 µm, and ellipsoid-doliiform conidia, 28–40 × 16–21 µm. A duplicate of this material has been re-examined [Argentina, Provincia de Río Negro, Bariloche, San Carlos de Bariloche, garden, on *Salvia officinalis*, May 1996, M. Havrylenko 540 (HAL 544 F)] and turned out to be identical with *G. neosalviae*. The conidiophores are either composed of a very long foot-cell followed by 1–3 short cells or shorter basal cells followed by a much longer cell and 1–3 shorter cells, and the basal septum is always elevated, 5–25(–30) µm. This is the first confirmation of

*Golovinomyces neosalviae* for Argentina and probably for South America in general. The description and illustration of *Golovinomyces biocellatus* on *Salvia officinalis* found in Corrientes, Argentina (Cabrera et al. 2010) does not agree with *G. neosalviae* (conidiophores consistently composed of a long foot-cell, on average  $66.5 \times 11.25 \mu\text{m}$ , followed by short cells, basal septum at the junction with the mother cell or only slightly elevated, conidia smaller, on average  $33.2 \times 16.5 \mu\text{m}$ ). The identity of this collection is unclear and requires molecular examinations. It might belong to *Golovinomyces salviae* or the infection could be caused by a plurivorous species of *Golovinomyces*.

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