First report of powdery mildew caused by *Erysiphe buhrii* on *Dianthus caryophyllus* in Italy

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During April 2021, several potted plants of carnation (*Dianthus caryophyllus*) cv. 'Pink Kisses', Caryophyllaceae family, growing in a farm located in Albenga (Savona province, northern Italy), showed symptoms and signs of a powdery mildew. The disease incidence on 40,000 plants was 90%. A whitish mycelium colonized both leaf surfaces, stems, calyxes and flower petals, starting with the more internal foliage. Foot-cells were cylindric, measured 27–39 × 8–10 (average: 33 × 9) µm and were followed by 1–2 (sometimes 3) shorter cells measuring 13–51 × 8–10 (average: 23 × 9) µm. Conidia, cylindric to ellipsoid, formed singularly and measured 33–48 × 13–22 (average: 41 × 17) µm. Fibrosin bodies were absent. The teleomorph was not observed. Mycelium was collected from affected tissues and the DNA of the pathogen was extracted using the E.Z.N.A. Fungal DNA Mini Kit (Omega Bio-Tek, Darmstadt, Germany). A PCR reaction was performed to amplify the Internal Transcribed Spacer (ITS) region of rDNA, using primers ITS1/ITS4 (White et al. 1990) and a 560 bp sequence (GenBank accession number MZ242255) was obtained. The NCBI blast analysis of this sequence showed 99.29% identity with *Erysiphe buhrii* whose morphological characteristics (Braun 1987) are in agreement with those reported above. Pathogenicity was confirmed by gently pressing affected leaves of *D. caryophyllus* cv. 'Pink Kisses' onto leaves of three healthy plants of the same cultivar. Three non-inoculated

plants were used as controls. Plants were maintained at temperatures from 20 to 28 °C. First symptoms appeared only on the inoculated plants about twelve days after the inoculation. *Erysiphe buhrii* has been reported on *Dianthus* spp. in many countries of the world (Farr and Rossman 2021). This is the first report of *E. buhrii* on *D. caryophyllus* in Italy. Further research is needed to identify the potentially susceptible cultivars of *D. caryophyllus* to *E. buhrii* that could become a serious threat to this host in Italy.

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