



# First report of brown leaf spot caused by *Alternaria alternata* on cast iron plant (*Aspidistra elatior*) in Italy

Stefania Lanzuise<sup>1</sup> · Annalisa Cozzolino<sup>1</sup> · Liberata Gualtieri<sup>1</sup> · Giuseppe Parrella<sup>1</sup> · Michelina Ruocco<sup>1</sup>

Published online: 12 March 2018  
© Società Italiana di Patologia Vegetale (S.I.Pa.V.) 2018

## Abstract

Cultivation of *Aspidistra elatior* Blume is very important in Southern Italy because diffusely used as cut foliage plant. During spring-summer 2016 a severe outbreak of brown leaf spots was observed in two cast iron plantations. The causal agent was identified as *Alternaria alternata* isolate by molecular methods. To the best of our knowledge, this is the first report of *A. alternata* causing brown spot on *A. elatior*.

**Keywords** New disease · Cast iron plant · ITS · GPD genes

*Aspidistra elatior* Blume is a perennial plant in the Asparagaceae. During spring-summer 2016, a severe disease was discovered in two Italian plantations covering an area of 4500 m<sup>2</sup>. Disease symptoms on leaves initially appeared as round, dark-brown necrotic lesions (0.5 to 20 cm in diameter) surrounded by yellow haloes. The leaf spots later contained concentric rings. Isolations were made from leaf tissues on PDA at 25 °C, resulting in olive to brown-to-black colonies. Microscopic examination revealed conidia to be catenate or solitary, dry, obclavate, beaked, medium olivaceous-brown to brown, with transverse and with or without oblique or longitudinal septa. Based on the morphology the fungus was identified as *Alternaria* sp. (Woudenberg et al. 2013). All isolates were identified sequencing ITS, *LS*, *actin*, *EF1* and *GPD* genes (Woudenberg et al. 2013) using the primers (LS266 and V9G), (LR0R and LR5), (ACT-512F and ACT-783R), (EF1-728F and EF2) and (GPD1 and GPD2). The sequences (KY676195, KY676196, KY676197, KY676198,

KY676199) were compared on NCBI GenBank and in a fungal database of CBS showing 100% identity with *A. alternata* (Fr.) Keissl. (CBS 916.96). Pathogenicity tests were performed on detached leaves inoculated in five spots by injecting 20 µl of a suspension of  $1.0 \times 10^6$  conidia/ml or by spraying on the adaxial and abaxial sides. Control leaves were treated with water. Leaves were kept in sealed plastic bags at 25 °C. Symptoms on inoculated leaves resembled those on naturally diseased leaves. To the best of our knowledge, this is the first report of *A. alternata* causing brown spot on *A. elatior*.

## Reference

Woudenberg JH, Groenewald JZ, Binder M, Crous PW (2013) *Alternaria* redefined. *Stud Mycol* 75:171–212

✉ Michelina Ruocco  
michelina.ruocco@ipsp.cnr.it

<sup>1</sup> Istituto per la Protezione Sostenibile delle Piante SS Portici (CNR-IPSP), via Università 133, 80055 Portici (NA), Italy