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Podosphaera sp. on *Euphorbia susannae* and *E. inermis* in Italy. A. Garibaldi, D. Bertetti, P. Pensa, A. Poli and M. L. Gullino, Centre of Competence AGROINNOVA, University of Torino, Via Leonardo da Vinci 44, 10095 Grugliasco, Italy.

Euphorbia susannae (common name Suzane's spurge) and *E. inermis* (Euphorbiaceae family) are among the succulent species grown in pots and commercialized in Liguria (northern Italy). During March 2012, plants belonging to the two species, grown in plastic pots in a commercial farm, showed signs and symptoms of an unknown powdery mildew. On *E. susannae*, apices of stems were found covered with white mycelia and conidia, with the development of necrosis on the tissues more interested by the disease. Five per cent of 5000 plants were affected. Conidia were hyaline, elliptical, borne in short chains (2-3 conidia per chain) and ranged in length from 24 to 31 μm (mean = 28) and width from 14 to 19 μm (mean = 16). Conidiophores were erect, with a foot cell straight or slightly flexuous ranging in length from 53 to 117 μm (mean = 83) and width from 9 to 11 (mean = 10), followed by 2 to 3 shorter cells 15 to 29 μm long (mean = 20) and 9 to 13 μm wide (mean = 11). On *E. inermis*, a white mycelium covered the stems starting from the apices causing yellowing and necrosis on leaves and infected tissues that finally dried and died. Eighty per cent of 500 plants were affected. Conidia ranged in length from 26 to 42 μm (mean = 33) and width from 13 to 22 μm (mean = 17). Conidiophores were erect, with a foot cell straight or slightly flexuous ranging in length from 67 to 139 μm (mean = 97) and width from 8 to 12 (mean = 10), followed by 2 to 3 shorter cells 18 to 42 μm long (mean = 26) and 8 to 16 μm wide (mean = 12). Fibrosin bodies were present on both hosts, while chasmothecia were not observed in the collected samples of both hosts. The Internal Transcribed Spacer (ITS) region of rDNA of samples of mycelium and conidia collected from the two hosts was amplified using the primers ITS1-ITS4 (3) and directly sequenced (GenBank Accession JX179221 and JX179219 for *E. susannae* and *E. inermis* respectively). By performing BLAST analysis the 692 bp amplicon from *E. susannae* and the 541 bp amplicon from *E. inermis* showed 100% homology with several sequences of *Podosphaera* spp. On the basis of morphological characteristics of the imperfect state and the ITS analysis, the causal agent of powdery mildew on *E. susannae* and *E. inermis* was identified as *Podosphaera* sp. Pathogenicity was confirmed through inoculation by gently brushing with mycelia and conidia from infected plants healthy potted plants 20 month old of *E. susannae* and *E. inermis*. Four plants/treatment/species were used. Not inoculated plants belonging to the two varieties served as control. Plants were maintained in a glasshouse at temperatures ranging from 18 to 25°C and relative humidity from 65 to 80%. About 20 days after inoculation, typical symptoms of powdery mildew developed on inoculated plants. The fungus observed on inoculated plants and found to be

morphologically identical to the originally observed fungus. Non-inoculated plants did not exhibit symptoms. The pathogenicity test was performed in duplicate. Several agents of powdery mildew have been reported on *Euphorbia* spp. Among others, *Sphaerotheca euphorbiae-hirtae*, currently classified as *Podosphaera euphorbiae-hirtae*, was observed on *E. hirta* (1) and *P. euphorbiae-helioscopiae* on *E. pekinensis* (2). However, this is the first report of *Podosphaera* sp. on *E. susannae* and *E. inermis* in Italy. The economic importance of this disease is presently non-valuable, due to limited planting of this species. Voucher specimens are available at the Agroinnova Collection, University of Torino.

References: (1) U. Braun. A monograph of the Erysiphales (Powdery mildews). J. Cramer, Berlin-Stuttgart, German Democratic Republic, 700 pages, 1987. (2) S. Y. Liu. Plant Dis. 95: 1314, 2011. (3) T. J. White et al. PCR Protocols: A Guide to Methods and Applications. M. A. Innis et al., eds. Academic Press, San Diego, 1990.