environmental sciences proceedings

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Abstract

Ink disease of European chestnut and distribution of associated *Phytophthora* species in Greece †

George T. Tziros

Aristotle University of Thessaloniki, Faculty of Agriculture, Laboratory of Plant Pathology, 54124, Thessaloniki, Greece. E-mail: gtziros@yahoo.gr

Abstract: Ink disease and chestnut blight of European chestnut (Castanea sativa) represent the two major threats for chestnut orchards and coppice forests in Greece. However, since the application of biological control of chestnut blight by introducing hypovirulence of Cryphonectria parasitica on a nationwide scale in Greece has been successful in limiting chestnut blight, ink disease is an increasing threat as it causes considerable loss. For this reason, the occurrence of the disease was investigated and an updated dis-tribution map of Phytophthora spp. in Greece has been created. In this study, the presence of ink disease was confirmed all over Greece and the Phytophthora species involved in the disease were recorded. Soil and tissue samples were collected and the obtained Phytophthora isolates were identified on the basis of their morphological and molecular traits. A total of seven species have been detected. P. cambivora, P. cinnamomi and P. cryptogea were recovered both from soil and tissue, while P. plurivora, P. cactorum and P. gonapodyides, P. citrophthora were isolated only from soil. Although P. cambivora is the pre-vailing species in chestnut orchards and natural coppice stands, the recent record of the more aggres-sive P. cinnamomi is now considered a potential major threat to C. sativa in Greece. The nationwide distribution of the disease and the severe loss of trees demand the implementation of appropriate control measures. The crucial role played by the irrigation methods used by the chestnut growers is pointed out as the major reason for the emergence of ink disease.

Keywords: Ink disease, Phytophthora spp., Castanea sativa

Citation: Lastname, F.; Lastname, F.; Lastname, F. Title. *Environ. Sci. Proc.* **2021**, *3*, x. https://doi.org/10.3390/xxxxx

Published: date