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Pathogenicity assessment of different *Plectosphaerella* species on basil, pepper and tomato crops in southern Italy

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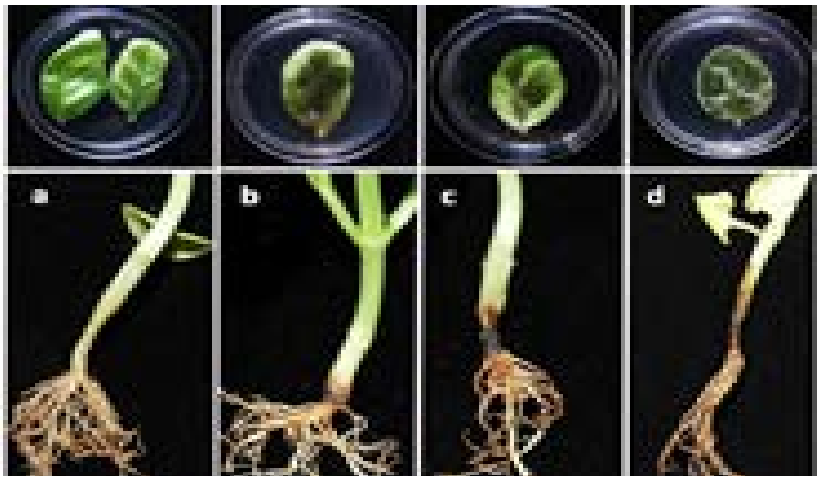
Statement of the Problem: *Plectosphaerella* species have been isolated from different hosts throughout the world such as basil, tomato, sunflower, soybean, cucurbits, pumpkin, endive, rocket, and Lamb lettuce. To date *Plectosphaerella* genus consists of 12 species such as *Pa. alismatis, Pa citrulli, Pa. cucumerina, Pa. delsorboi, Pa. melonis, Pa. oligotrophica, Pa. oratosquillae, Pa. pauciseptata, Pa. plurivora, Pa. populi, Pa. ramiseptata* and *Pa. sinensis*. The most common and known species of *Plectosphaerella* is *Pa. cucumerina*, which has been reported as pathogen and endophyte from different horticultural crops as well as biological agent to control of *Galium spurium*, *Sagittaria trifolia* and nematodes of potato.

Aim: The purpose of this study is to ascertain the role that these fungi play in affected horticultural crops by pathogenicity tests.

Methodology & Theoretical Orientation: Nine *Plectosphaerella* species were artificially inoculated on three different hosts (basil, pepper and tomato) to perform pathogenicity tests in-vitro (detaches lives) and in-vivo (young 30-day old plants) conditions. The pathogenicity tests were carried out in a greenhouse with experimental design consisting of 'two independent batches'. Each host × isolate combination was replicated five times. The disease severities were recorded after 15-35 days after incubation on leaf surface and on roots and collar showing symptoms.

Findings: Pathogenicity tests demonstrated that except for *Pa. oratosquillae*, all *Plectosphaerella* species essayed in this study are able to cause disease symptoms on all hosts used with different disease severity degrees. *Plectosphaerella paucisepatata* and *Pa. plurivora* showed a vascular behavior while the other seven species a parenchymatous behavior. Finally, *Pa. ramiseptata* resulted to be the most pathogenic species on all the three hosts.

Conclusion & Significance: We consider that the Plectosphaerella species investigated in the present study are not endophytic fungi, but pathogenic fungi as they cause necrosis symptoms with different degrees of disease severity.



Biography

Maria Luisa Raimondo is a Plant Pathology PhD and actually have a research fellowship in the Department of Sciences of Agriculture, Food and Environment in Foggia, Italy. Her main expertises are in taxonomic studies of fungi by morphological and molecular tools, as well as by use of Bionformatic softwares. She collaborates in several research projects related to Plant Pathology and described seven novel fungal species by molecular approaches. Dr. Maria Luisa Raimondo has been also interesting to research and study new control means by biostimulants, resistance inducers, fungal antagonists and biocides substances.

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