



## Morphological, physiological and pathogenic variability of small-spore *Alternaria* sp. causing leaf blight of Solanaceous plants in Algeria

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Due to premature defoliation, early blight epidemics can cause major yield losses. Large-spore *Alternaria* species such as *A. solani* and *A. tomatophila* have long been recognized as important pathogens responsible for such blight disease in the family Solanaceae and thus represent a serious risk for crop production. Small-spore *Alternaria* species have also been frequently isolated from plant samples with typical blight symptoms but their incidence as primary pathogens is often controversial. In order to study the diversity of small-spore *Alternaria* species, 32 isolates were selected from a larger collection of 130 isolates from infected leaves, fruits and stems of tomato from various growing regions of North-West Algeria. Morphological characterization under standard conditions and polymerase chain reaction (PCR) analyses using specific primers to amplify a part of the ITS regions and the 5.8S gene were conducted to confirm their identification as members of the *alternata* section. They were then examined according to morphological characteristics of conidia and sporulation patterns on potato carrot agar (PCA) and were segregated into three morphological species: *A. alternata*, *A. tenuissima* and *A. arborescens*. Colony type, substrate colour, margin, zonation, pigmentation, colony diameter and conidia production were studied on potato sucrose agar (PSA). Physiological parameters and nutritional requirements of the isolates were also assessed and a data matrix based on cluster analysis and Euclidean distance was constructed. Results of pathogenicity test on tomato showed obvious diversity among the isolates and they could be separated into two groups based on their virulence. The dendrogram based on the influence of cultural, nutritional and physiological characters suggests moderate heterogeneity within the populations of *A. alternata* and *A. tenuissima*. The small-spore species formed five clusters that fundamentally paralleled the morphological groupings. However, the results provided no evidence for geographical and pathogenicity clustering of isolates.

Résumé en anglais

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