

ABSTRACT

SOZAN EID MOHAMED EL-ABEID. VARIANCE AMONG *ALTERNARIA* SPP. IN RELATION TO THEIR PATHOGENIC CAPABILITY TO SOME PLANT HOSTS. Un-published Master of Science Thesis, Department of Plant Pathology, Faculty of Agriculture, Ain Shams University (2005).

The present investigation was planned to study the morphological diversity among *Alternaria* spp. isolated from some economic crops (potato, tomato, eggplant, pepper, cotton and soybean) to determine the pathogenicity of the different morphological types and their potential as causal agents of *Alternaria* spot or blight of these economic plants. To evaluate the phylogenetic relationships among isolated *Alternaria* spp using varieties of molecular technique to further our understanding of the taxonomic status of this *Alternaria* spp.

Alternaria spp were isolated from all crops under study growing in six governorates, i.e. Ismaillia, Sharkia. Giza, Beni-suef, Behairh and Gharbia. The other genera of fungi that isolated were *Cladosporium*, *Stemphylium*, *Helminthosporium* and *Ulocladium*. Study revealed that seventeen isolates of *Alternaria* spp. were significantly differed in their pathogenic capability. The most pathogenic isolates were two isolates isolated from potato and eggplant samples collected from Ismallia governorate, followed by two isolates isolated from potato and cotton samples collected from Sharqia and Beni- Suef governorates.

However, the collections of 17 *Alternaria* isolates

were grouped into 6 species, i.e. *A. alteranta*, *A. citri*, *A. tenuisima*, *A. dianthi*, *A. raphani* and *A. solani*, based on morphological and characteristics of sporulation apparatus. For the characterization of colony morphology, the incubation of single spored colonies at 23°C in darkness on Potato Carrot Agar medium resulted in diagnostic features that could be used to differentiate representative isolates of the *A. alternata*, *A. tenuissima* and *A. raphani* species.

Among seventeen *Alternaria* isolates, fourteen isolates were distinguished and identified according to their biochemical and molecular fingerprinting. Biochemical fingerprints were investigated based on proteins banding patterns using SDS-PAGE and three isozymes system (Estrase, Malic dehydrogenase, acid phosphatase) for fresh mycelium, in addition, molecular genetic finger printing using RAPD-PCR technique. In this respect, three primers out of the tested ten oligomers succeeded to amplify polymeric DNA. Hence, each isolate has a different and distinct molecular fingerprint.

Keywords: *Alternaria alteranta*, *A. citri*, *A. tenuisima*, *A. dianthi*, *A. raphani*, *A. solani*, potato, tomato, eggplant, pepper, cotton, soybean, fingerprinting, SDS-PAGE, Isozyme and RAPD-PCR.

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