

RESEARCH ARTICLE

Detoxification of oxalic acid by *Pseudomonas fluorescens* during wilt disease condition in chickpea plant

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ABSTRACT

Oxalic acid is a simple metabolite produced by many fungi including *Fusarium oxysporum* f.sp. *ciceri*. Its phytotoxic activity has been known for years and it has been implicated as a virulence factor for several phytopathogenic fungi. It was also reported that effective reduction of oxalic acid by *Pseudomonas fluorescens* in a culture medium. So the present experiment has been designed to prove the ability of *Pseudomonas fluorescens* isolate (*Pf-3*) as detoxification agent of oxalic acid produced by fungal pathogen in wilt disease condition at various stages of seedling growth in different varieties of chickpea. The result showed the higher oxalic acid content in susceptible variety as compared to resistant one which was positively corresponded to mortality of the seedling due to wilt in wilt sick soil compared to control one. The oxalic acid content was significantly high in a plant grown in wilt sick soil condition in general compared to control one which also reflected higher mortality rate of chickpea seedling particularly in susceptible variety JG-62 compared to rest of the varieties. The significantly lowest value of oxalic acid was observed in *Pseudomonas fluorescens Pf-3* seed treated chickpea plants grown even in wilt sick soil also. It indicated effective detoxification of oxalic acid by *Pf-3* which induced by *Fusarium oxysporum* f.sp. *ciceri* in chickpea seedling. It was also reflected in less mortality of seedlings due to wilt in respective treatment.

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