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Research Article

Role of Defense Inducers in Modulating Biochemical Responses to Alternaria Leaf Blight

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Abstract

Alternaria leaf blight of sunflower has been considered as a potentially destructive disease. Due to cons of using chemical pesticides, the present investigation was undertaken to know the effect of three plant defence inducers *viz*., salicylic acid, monopotassium phosphate and sodium propionate for the eco-friendly management of Alternaria leaf blight disease. Seed treatment with salicylic acid at 100 ppm followed by foliar spray of salicylic acid at 100 ppm recorded highest secondary metabolites such as flavonoids (68.71 mg g^{-1} FW) and phenols (73.53 mg g^{-1} FW) when compared to phenolics (45.07 mg g^{-1} FW) and flavonoids (51.43 mg g^{-1} FW) in control plants. Seed treatment with salicylic acid at 100 ppm followed by foliar spray of salicylic acid at 100 ppm showed increased defense enzymes such as superoxide dismutase (40.45 mg/50 per cent inhibition) and peroxidase (16.86 mg min^{-1} mg^{-1} protein) when compared to superoxide dismutase (54.36 mg/50 per cent inhibition) and peroxidase (9.63 mg min^{-1} mg^{-1} protein) in control plants. This study demonstrated that seed treatment followed by foliar spray with salicylic acid can be used effectively for the management of Alternaria blight in fields as it exhibited more defense enzyme activity and secondary metabolites.

Key words: *Alternaria*, defense enzymes, secondary metabolites, seed treatment

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