

Abstract

Fusarium head blight disease in wheat is a destructive disease in many regions of the world wide and Iran. The disease cause losses quantity, quality and crop contamination by mycotoxins. The principal fungal agent of Fusarium head blight disease is *Fusarium graminearum* Schwabe species with sexual forms *Gibberella zae*. The wide researches to management of disease using resistant and tolerance cultivars, fungicides and forecasting systems have been performed, while these strategies have not been successful. In recent year, use of inducer chemicals compounds causing activation of plant defenses mechanism before attack of pathogen and having low environmental risks have been considered. In this study, effect of salicylic acid and methyl jasmonate on the induction of resistance in infected wheat plant to Fusarium head blight disease was investigated in two separate experiments factorial completely randomized design with three replications in greenhouse conditions. Tajan cultivar was used in all experiments. In first experiment, different salicylic acid concentrations of 200, 400 and 600 ppm were used. The results showed that was greatest increase in β - 1,3- glucanase and Oxalate oxidase expression compared to control treatment in the 400 and 600 ppm respectively to salicylic acid and methyl jasmonate determined. The highest activity of peroxidase, polyphenol oxidase, guaiacol peroxidase and total phenol was determined of compared with control for both salicylic acid and methyl jasmonate to respectively 400 and 600 ppm treatment. The results indicate that salicylic acid and methyl jasmonate can be used induction resistance in plants against pathogens.

Key words: Salicylic acid, methyl jasmonate, Resistance gene expression, Wheat head blight, Induction of resistance, *Fusarium graminearum*



University of Zabol
Graduate school
Faculty of Agriculture
Department of Plant Protection

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Effect of salicylic acid and Methyl jasmonate on induction of resistance in wheat to head blight disease

Supervisor

Dr. S. K. Sabbagh

Advisors

Dr. S. Esmaeilzade

Dr. M. Salari

By

M. Paykani

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