Research Article

Hydrogen Peroxide Induced Resistance in Tea Plants Against *Glomerella cingulata* and the Associated Changes in the Defense Enzymes

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Abstract

Tea variety (TV-22) showing highly susceptible reaction against *Glomerella cingulata* causing brown blight disease was selected for induction of resistance following foliar application of hydrogen peroxide. After bioassay of the inducer and determination of induction period, time course accumulation of peroxidase (POX), catalase (CAT), ascorbate peroxidase (APX), chitinase (CHT) and ß-1,3-glucanase (GLU) were evaluated in plants following treatment with hydrogen peroxide. CHT and GLU accumulated more than POX and APX . On the other hand, level of CAT did not change to any significant extent in treated plants. New isozymes of POX were induced during treatment as well as after inoculation with pathogen. Pre-treatment with hydrogen peroxide was found to protect the tea plants from brown blight disease. Inoculation further stimulated the activities of these enzymes, which, along with the antimicrobial properties of hydrogen peroxide, may account for the protection mechanism.

Key words: *Glomerella cingulata*, hydrogen peroxide, induced resistance, tea

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