Research Article

Detection of Pathogen Induced Protein in Tea Leaves and Biochemical Changes in Defense Enzymes Following Inoculation with *Glomerella cingulata*

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Abstract

Among 18 tea varieties tested for screening resistance against *Glomerella cingulata* using whole plant inoculation technique, TV-30 was found to be highly resistant while CP-1 was moderately susceptible and TV-22 was most susceptible. Scanning Electron Microscopic observations of adaxial and abaxial surface of brown blight infected tea leaves have been studied. Serological assays using PTA-ELISA, Dot immunobinding assay and western blot formats of antigens of healthy and artificially inoculated leaf with *G. cingulata* of three tea varieties (TV-30, TV-22 and CP-1) were performed using polyclonal antibody raised against *G. cingulata.* Pathogen induced protein (24Kda) was detected in susceptible varieties (TV-22 and CP-1) in western blot analysis. Time course accumulation of phenylalalnine ammonia lyase, tyrosine ammonia lyase, peroxidase and polyphenol oxidase after 24,48 and 72h of inoculation of tea varieties with *G. cingulata* indicated enhanced enzyme activities in resistant variety (TV-30) in comparision with other susceptible varieties tested. Isozymes of peroxidase and polyphenoloxidase were also characterized.

Key words: Defense enzymes, *Glomerella cingulata*, SEM, tea, western blot

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