

## Immunodetection of *Sphaerostilbe repens* causing Violet Root Rot disease of *Camellia sinensis*

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Among 11 varieties of tea tested against *Sphaerostilbe repens* causal agent of Violet Root Rot disease, TV-26 and Teenali-17/1/54 were found most susceptible while TV-23 and TV-25 were resistant. Cultural characteristic of the pathogen *in vitro* revealed optimum growth after 24 days of incubation at pH 5.0. Sucrose was found to be the best carbon source for growth of the pathogen. Optimum growth was recorded in yeast extract followed by casein hydrolysate as organic nitrogen sources while maximum growth occurred in calcium nitrate among inorganic nitrogen sources. Polyclonal antibody (PAb) was raised in white male rabbit against mycelial antigen of *S. repens*. The immunoglobulin (IgG) fraction of the antibody was purified by ammonium sulphate precipitation and Sephadex column chromatography. Effectiveness of raising antibody against the pathogen was confirmed by immunodiffusion test and dot immunobinding assay. Optimization of antigen and antibody concentration was done using plate trapped antigen coated enzyme linked immunosorbent assay (PTA-ELISA). Immunodetection of *S. repens* in soil samples using PTA-ELISA format was developed. Treatment of mycelia and conidia of *S. repens* with homologous PAb and reacted with fluorescein isothiocyanate (FITC) showed a strong apple green fluorescence that was more intense on young hyphal tips, while conidia showed a general fluorescence throughout the surface.

**Key words:** Polyclonal antibodies, *Sphaerostilbe repens*, tea, Violet root rot

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