

Research Article

Efficacy of *Volkameria inermis*, *Solanum torvum*, *Senna occidentalis* and *Solanum nigrum* against *Pythium aphanidermatum* Causing Chilli Damping-off

Pooja Yadav¹, Akshata Sawant², Darshana Salaskar³, Sayaji Mehetre⁴ and Sangeeta Godbole⁵

^{2,3,4}Nuclear Agriculture and Biotechnology Division, BARC, Trombay, Mumbai, India, ^{1,5}Department of Botany, Jai hind College, Mumbai, India; Email: sangeeta.godbole@jaihindcollege.edu.in

Abstract

Pythium damping-off is a widespread disease affecting chilli (*Capsicum annuum* L.). This pathogen particularly targets and kills newly sprouted seedlings shortly after they emerge. As use of chemical pesticides negatively impact human health and environment, thus the study aimed to investigate antifungal activity of ethanolic leaf extracts of *Volkameria inermis*, *Solanum torvum*, *Senna occidentalis* and fruits of *Solanum nigrum* against *P. aphanidermatum* using food poisoning technique. The growth inhibition of *Pythium* sp. was measured by comparing the radial growth of fungal colony on treated media versus untreated controls. The ethanolic extracts of *V. inermis* ($42.213 \pm 3.631\%$) and fruits of *S. nigrum* ($31.196 \pm 3.39\%$) have shown significant inhibitory effect on the mycelial growth of *P. aphanidermatum*. The study further evaluated the impact of plant powders on chilli seed germination in *Pythium* infected soil. leaf powder of *V. inermis* showed positive impact on chilli seed with higher germination ($83.33 \pm 1.430\%$) almost equivalent to chemical fungicide used ($90 \pm 2.48\%$) as compared to the control, indicating a reduction in *Pythium*-induced damping-off. The results suggested, *V. inermis* ethanolic extracts and powders can serve as effective green antifungal agent against *P. aphanidermatum*. Practical field application and long-term effectiveness of these green antifungal agents should be explored.

Key words: Antifungal, biopesticides, damping off disease, *Pythium aphanidermatum*

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