Research Article

Protease Inhibition by *Allium cepa* L. Forage Deproteinised Juice in *Trichoderma viride*

Rajesh K Jadhav and Nimisha Mestry

Department of Botany, Research Laboratory, DG Ruparel College, Mahim, University of Mumbai, Mumbai 400 016, Maharashtra, India; Email: rajesh.jadhav@ruparel.edu; mestrynimisha@yahoo.in

Abstract

During the process of green crop fractionation (GCF) in leaf protein research, the pulp is squeezed to form the juice and heated to make it deproteinised by coagulation. This fresh concentrated deproteinised juice (DPJ) obtained is utilized directly to observe the effect on the growth of fungi *Trichoderma* and other fungi. DPJ prepared from cabbage, cauliflower, raddish and onion leaves were utilized. *Trichoderma* growth succeeded on other DPJ but inhibited on onion forage DPJ. It was observed that after five days, there was very slight growth because of the effect of onion DPJ. Till 15 days there was growth progress of *Trichoderma* as compared to Glucose Nitrate (GN) control medium. *Allium cepa.* L. DPJ was found to have the efficacy in inhibiting the growth of this fungi. Therefore, *Allium* DPJ can be beneficial to control *Trichoderma* infection as it harms the horticultural and mushroom crops. On the other hand, mycophytopathogen *Trichoderma* defense other harmful microbial growth in crops. It secretes lytic enzymes proteases and cellulases during growth. These enzyme activity zones of protease enhanced when DPJ was used for its growth prepared from forages of two *Amaranthus* species as compared to Glucose nitrate (GN) medium. The activity of enzyme cellulase was found reduced when the fungi grown on onion DPJ. Onion DPJ also inhibited the activity of protease enzyme in the culture filtrate of *Trichoderma.*

Key words: *Allium cepa,* protease, deproteinised forage juice, *Trichoderma*

Citation: Jadhav RK and Mestry N. 2018. Protease inhibition by *Allium cepa* L. forage deproteinised juice (DPJ) in *Trichoderma viride*. *J Mycol Pl Pathol* 48(3):357-366.