Variability in antagonistic activity and root colonizing behaviour of *Trichoderma* Isolates

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Abstract

Antagonistic activity and root colonizing behaviour of 10 *Trichoderma* isolates collected from different agro-ecological zone of West Bengal were evaluated. Of these, *T. viride* from Bishnupur (red and lateritic zone) and T. roseum of Alipurduar (*terai* zone) were most prominent showing superior antagonistic effects and fast growth; both overgrew *Rhizoctonia solani* after 3 days of incubation in dual culture. Production of volatile and non-volatile substances was highest for *T. viride* of Falakata (terai) origin as evidenced by the greatest mycelial growth inhibition in *R. solani,* followed by *T. roseum* from Alipurduar. The highest growth stimulation of the antagonist by both exudates and extract of Bengal gram (*Cicer arietinum* Linn.) roots was found in *T. harzianum* of Kalyani (new alluvial zone) source. This isolate, however, was not only antagonistic to the pathogen, but also colonized the rhizosphere and maintained high population growth (224 x 106 cfu g–1 of soil at 30 days after sowing). Conversely, very low rhizosphere colonizing ability was found in *T. roseum* collected from Bardhaman's old alluvial zone. Colonization of non-rhizospheric soil by *Trichoderma* isolate was very low compared to that of rhizosphere (81.33 x 106 cfu g–1 of soil at 20 days after sowing for *T. virens* from Kalimpong hill zone). Significantly, the isolates showing high antagonism were not always highly rhizosphere competent.

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