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## Effect of substrates on plant transpiration rate under several vapour pressure deficit (VPD) level

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Vapour pressure deficit (VPD) is considered as an important environmental factor that affect transpiration rate (TR) in plants. In this study, two different plants, Panicum (*Panicum tanzania*) and Pepper (*Capsicum capsularis*) with 4 different substrates (hydroponic, organic, sand and mineral) were subjected to low (0.50-1.5) and high VPD (2.50-3.90) environments to study their substrate effects on plant transpiration rate in 3 different growth stages (31, 37 and 43 days after sowing). The highest transpiration rate of Panicum measured in hydroponic condition (5.44) under higher VPD level and lower leaf area. The lowest TR was measured in mineral substrate (0.21) under lower VPD level with larger leaf area. In Pepper (C3) plant, the highest TR was noted in mineral substrate (2.08) under high VPD (3.29), comparatively lower leaf area to other substrates. The lowest TR was indicated in sandy soil (0.17) with lower VPD level and larger leaf area. The results showed that sand substrate has the lowest transpiration rate in both plants and hydroponic condition showed highest transpiration rate as well. The other substrates rate in between two of them.

### Biography

Md Rais Uddin Rashed has completed his Master's in Agricultural Sciences with thesis title: "Effect of substrates on plant transpiration rate under several Vapour Pressure Deficit level" with *Panicum maximum* cv. *tanzania* and Pepper (*Capsicum capsularis*) at the University of Hohenheim, Stuttgart, Germany. He obtained his Bachelor's in Agriculture and Masters in Genetics and Plant Breeding with thesis title: Screening of salt tolerant genotypes *in vitro* in tomato) from Sher-e-Bangla Agricultural University, Dhaka, Bangladesh. He worked as an "Assistant Researcher" at "Eurofins Agroscience Services Ecotox GmbH" Agro based company for almost two years as part time basis in Germany. He also worked at Genetics and Molecular Biological Laboratory for one and half year as a "Research Assistant".

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