

Impact of Water Deficit and Nematode Infection Stress on Growth and Physiological Responses of Mungbean (*Vigna radiata* L.)

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Abstract : The resistance of mungbean (*Vigna radiata* L. Wilczek) and its physiological responses to drought stress was studied in a greenhouse pot experiment. A randomized complete block Design (RCBD) with factorial arrangement having three replications of each treatment was used. Treatments included three water deficit samples (80%, 40% and 20% of field capacity), two mungbean genotypes (Kawmay-1 and VC2010) and two root-knot nematode (*Meloidogyne javanica*) infection levels (infected and non-infected). Results showed that water deficit stress significantly hampered most of the studied parameters, except for the shoot water content, whereas genotypes showed highly significant differences for stomatal conductance, shoot dry weight and leaf area. Shoot water content was found to be non-significant in relation to chlorophyll b, shoot dry weight and leaf area, whereas highly significant but negatively correlated with chlorophyll a and stomatal conductance. However, all other possible correlations among studied parameters were found to be highly and positively significant. Results also showed that VC 2010 surpassed Kawmay-1 in most of studied characteristics. In the present study, genotypic variation was observed for these parameters and can be used as a basis for selection of the most promising variety under drought conditions.

Keywords : drought stress, *Meloidogyne javanica*, mungbean, stomatal conductivity, leaf area, root-knot nematode, shoot water content

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