



## Effect of drought stress on proline content and electrolyte leakage in leaves and roots of forage legumes

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Periods of drought limit survival of some plant species from Rio Grande do Sul state, resulting in metabolic alterations to escape or tolerate drought. The aim of this work was to quantify proline levels and electrolyte leakage in leaves and roots of *Macroptilium lathyroides* (L.) and *Vigna luteola* (L.) in order to evaluate plant tolerance to variations in soil water availability. Plants were grown in greenhouse conditions, in 3 L pots containing soil and turf as substrate in the 1: 1 ratio. Plants were submitted to water deficit 60 days after emergence by suspending irrigation and monitoring soil water content by gravimetry. In control, plants were maintained in field capacity. Evaluations were performed at four, 11 and 18 days after plant submission to water deficit. The treatments were arranged in randomized blocks, with four replicates, the experimental unit was represented by a pot containing three plants. Means were compared by the Tukey test ( $P \leq 0.05$ ). Proline content and electrolyte leakage increased significantly in roots and leaves of both plant species. It can be inferred that the stability of cell membranes were compromised due to the increase in levels of electrolyte leakage. However, the accumulation of osmolytes such as proline in roots and leaves, in response to water restriction, constitutes an adaptative metabolic response common to the studied legumes.

**Keywords:** *Macroptilium lathyroides*, *Vigna luteola*, water deficit

**Acknowledgements:** CAPES and Embrapa