



INORGANIC AND ORGANIC SOLUTES IN APOPLASTIC AND SYMPLASTIC SPACES CONTRIBUTE TO OSMOTIC ADJUSTMENT DURING LEAF ROLLING IN *CTENANTHE SETOSA*

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In *Ctenanthe setosa* we studied changes in apoplastic and symplastic sugar, proline, ions and organic acids under drought stress causing leaf rolling. Leaf extractions were made at visually judged leaf rolling stages (not rolled, slightly rolled, strongly rolled, completely rolled). Glucose and sucrose content increased in the symplast. Glucose declined during leaf rolling in the apoplast, and sucrose was not present. Symplastic and apoplastic proline content increased during leaf rolling; citrate increased in both compartments, and malate increased in the symplast but declined in the apoplast. Symplastic and apoplastic K⁺ declined during rolling. Ca²⁺ increased at slightly rolled stage but then began to decrease in both compartments. Na⁺ level increasing in the symplast but decreased in the apoplast. Cl⁻ decreased in both compartments during rolling. Glucose, proline, Na⁺ and K⁺ are preferred for osmotic adjustment during leaf rolling under drought.

Key words: Apoplast, ions, leaf rolling, organic acids, proline, sugars.

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