

**ACCURACY OF LEAF RECTANGULAR AREA  
ADOPTION IN GROWTH STUDIES: THE CASE OF  
TOMATO (*Lycopersicon esculentum* Mill)**

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**ABSTRACT**

The efficacy of a simple time-saving method of leaf area estimation in tomato plant growth studies, the leaf rectangular area (LRA) was examined. The main objective was to establish whether or not such a method could be appropriate in leaf area estimation in situations where time and/or facility are limiting. Thus, LRA, derived from leaf length and breadth dimensions, was correlated with leaf area estimated through conventional means at weekly interval from four to eight weeks after transplanting. Simple correlation analysis was used to determine the degree and type of association between the two methods while a regression of LRA on actual leaf area was done for linear regression analysis and the evolution of a predictive model for estimating actual leaf area based on LRA. Highly significant positive correlation values were obtained throughout the sampling period for both years of the trial. The coefficient of determination for linear regression was equally high, indicating that the use of LRA in leaf area estimation could substitute for the conventional methods (grid, dry weight proportion, planimeter) which are usually time consuming and instrument-dependent. Fit equations for leaf area estimation were written for the different plant growth phases.

**Keywords:** Leaf rectangular area, Actual leaf area, Regression analysis, *Lycopersicon esculentum*.