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Estimation of leaf area model in hooker chives (*Allium hookeri*) and chollng (*Allium chinense*) using non-destructive method

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ABSTRACT : A field trial was conducted from 2011-12 on hooker chives (*Allium hookeri*) and chollang (*Allium chinense*), to find out the best method of estimation of leaf, at Horticultural Research Farm, Andro, Central Agricultural University, Manipur. In this study, a leaf area estimation model was developed using linear measurement such as laminar length and breadth individually and together with the product of length and breadth by step wise regression analysis. *Allium* species are commercially used by the people of Manipur as spice crops however; their cultivation is not commercialized for large scale production. Leaf area estimation *in situ* of these crops is important for studying the relationship between leaf area development and plant growth. The proposed leaf area (LA) estimation model of regression equation based on leaf length, $Y=6.426 + 2.051X_1$ having correlation of co-efficient of determination ($r^2=0.91$) were suited for the estimation of leaf area of hooker chives, while for chollang the proposed leaf area (LA) estimation model of regression equation based on dry weight of leaf, $Y=3.636+4.605X_3$ having the co-efficient of determination ($r^2 = 0.94$) were most suited for the estimation of leaf area for chollang. However, dry weight of leaf method being destructive, the non-destructive method of the regression equation in chollang based on leaf breadth, $Y= 0.214 + 3.772X_2$ having the co-efficient of determination ($r^2=0.93$) will be better suited for the estimation of leaf area estimation in chollang.

KEY WORDS : Hooker chives, Chollang, Leaf area, Estimation

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