

ESTIMATION OF BIOMASS IN HEVEA CLONES BY REGRESSION METHOD : RELATION BETWEEN GIRTH AND BIOMASS

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The relationship between girth and the above ground biomass was studied in two clones, with varied growth habits, of *Hevea brasiliensis*. The clones chosen were RRIM 600 and RRH 118. A set of relationships were developed using the biomass as a power function of girth for different age groups from first year after planting upto fifth year. The regression equations were found non-significant for individual clones as well as for years from second year onwards. A general equation was thus developed and is given as biomass in g(W) = 2.278479 X ^{2.2663} (where, X is the girth at 15 cm height from bud union). The relation is found to be good fit from 16 cm or more girth, and is location specific.

Key words : *Hevea brasiliensis*, Girth, Biomass, Regression model.

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INTRODUCTION

In rubber cultivation, girth as well as girth increment have been recognised as important parameters of growth especially during juvenile period. Girth is the only criterion for opening the trees for tapping. Regression equations for girth and biomass of *Hevea* trees have already been established (Shorrocks *et al.*, 1965; Mo and Liang, 1980; Hu and Wu, 1983). The commonly used regression model developed by Shorrocks *et al.* (1965) in Malaysia may not be appropriate in predicting biomass under the varied cultural as well as environmental conditions existing in the non traditional rubber growing tracts of India (Sethuraj *et al.*, 1991).

Since girth is a simple measure of

growth of the tree and its correlation with the above ground biomass of the tree is highly significant, it can very well be used in growth analysis of young *Hevea* trees. In the present study, the relationship between girth and biomass of juvenile *Hevea* trees belonging to two clones was established at a non traditional rubber growing region of India.

MATERIALS AND METHODS

The experiment was laid out during 1987 at the Regional Research Farm of the Rubber Research Institute of India at Taranagar (Location : 23° 53'n; 91° 15'E; 30 m MSI.; Soil type: Sandy clay loam) in Tripura. The planting materials were budded stumps of clones RRIM 600 and RRH 118 planted in separate plots with spacings