

ASSOCIATION ANALYSIS FOR MORPHOLOGICAL AND BIOMASS TRAITS IN *BAUHINIA VARIEGATA* SEEDLINGS

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ABSTRACT : Seeds from thirty two different seed sources of *Bauhinia variegata* were collected from the states of Himachal Pradesh, Uttranchal, Haryana and Jammu & Kashmir. They were studied for morphological and biomass traits under nursery condition in the experimental area of the Department of Tree Improvement and Genetic Resources, during 2004 under two different environments, viz., Glasshouse and natural field conditions. The traits studied were seedling height, seedling diameter, internodal length, number of leaves, leaf area, shoot and root fresh and dry weight, shoot/root ratio and seedling biomass. Out of total 55 correlation combinations in both environments, 29 and 28 were positive and highly significant, 6 and 2 negative and significant and the rest non-significant. Shoot dry weight with root dry weight and seedling biomass under both environments showed positive and highly significant correlation. Phenotypic correlation coefficients were lower than the corresponding genotypic ones for glass house and field conditions. Shoot fresh weight showed positive and highly significant correlation at phenotypic, genotypic and environmental level with seedling biomass. Root fresh weight with root dry weight and seedling biomass; shoot dry weight with root dry weight and seedling biomass under both conditions. Root dry weight showed negative but significant correlation with shoot/root ratio under glasshouse but positive and non-significant at field level. Leaf area revealed positive and highly significant association with seedling biomass under both conditions. Path analysis revealed that seedling biomass, root dry weight and shoot/root ratio showed the highest direct effect on shoot dry weight under both the environments. These traits can be used as selection criteria for screening the superior genotype.

Key words : *Bauhinia variegata*, Direct effects, Path analysis, Phenotypic and Genotypic correlation.