GENETIC IMPROVEMENT FOR GROWTH PERFORMANCE TO PRODUCE HIGHER BIOMASS IN GMELINA ARBOREA ROXB.

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Abstract

*Gmelina arborea* Roxb. is widely been grown in tropical and sub-tropical countries, and occupies important place as raw materials for pulp and paper making when harvested in early stages and becomes excellent timer when grown for longer durations. The centre of diversity for the species is expected to be northeastern states of India from where it seems to have been distributed to other parts of the World. The genetic improvement of the species for increased biomass was started by selecting 119 plus trees from eastern and northeastern parts of India to establish gene banks and first generation seed orchards. Further, half-sibs for 49 genotypes were established across geographical locations to evaluate growth performance, stability and adaptability under G x E interactions as well as to estimate heritability, genetic advance and diversity particularly for traits of economic importance. Maximum survival was recorded in Teliamura, Tripura (70 %) and Imphal, Manipur (62 %). Mean height at Teliamura was recorded to be exceptional with mean increment of 2.69 m against 0.48 m at Imphal. Similarly, mean color diameter was recorded to 11.20 cm and 4.5 cm with annual increment of 4.70 and 0.33 cm respectively for Teliamura and Manipur. Among the genotypes, progeny No. 39 and 106 were found to be performing exceptionally well both for height and collar diameter across the locations and durations. In fact, both these genotypes were recorded to be top rankers. Though early performance has reveled exciting information, evaluation for longer period needs per se to be conducted for over the years to genetic worth for production of higher biomass.

Key words : biomass, diversity, genetic improvement, Gmelina arborea

Oral presentation