

Title:

Exploring the Teak Genome: Insights and Challenges

Abstract:

Teak (*Tectona grandis* L.f) is one of the world's most valuable timber species with popular properties like extreme durability, dimensional stability, strength, excellent carvability, and distinctive appearance. Teak timber has numerous uses including ship building, indoor and outdoor furniture, flooring, paneling, plywood and decorative veneers. Although teak is native to India, Myanmar and Thailand, currently teak is grown in more than 100 countries because of its demand in the international market. India is the major importer of teak from other countries as Indians consider teak as cultural premises. However, the natural populations including old plantations of teak in India are subjected to climate change effects. Hence, infusion of genetically divergent material for large scale cultivation and conservation of teak genetic resources have become priority. Several studies have indicated the possibilities of genetic gain from tree improvement of teak for timber production. Fast advancing genomic technologies enable the acceleration of conservation and tree breeding programs. They have potential to reveal the dynamics of neutral and adaptive variation in teak populations and the processes underlie spatially explicit patterns of genetic and genomic variation. At this juncture, the efforts made in exploring the teak genome will be discussed.