

PROJECT PROFILE

Title: Molecular analysis for population differentiation and mating system studies in *Acacia auriculiformis* using dominant and codominant markers.

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Start and Completion dates: 01.04.2010 to 31.03.2014 (Four years)

Objectives:

1. To quantify genetic diversity amongst the *Acacia auriculiformis* selection using ISSR markers.
2. To study the mating system in *Acacia auriculiformis* using Microsatellite marker.

Funding Agency: Indian Council of Forestry Research and Education (ICFRE)

Summary:

- The genetic diversity of the *Acacia auriculiformis* was estimated with the data generated from dominant marker viz, ISSR, in the orchard population. The genetic diversity of orchard populations of *A. auriculiformis* was high (Nei's gene diversity value of 0.45). The mean observed number of alleles ranged between 1.8-2.0 and the mean expected number of alleles ranged between 1.3 to 1.8.
- Ten different ISSR marker primers were used for analysis of *A. auriculiformis* orchard populations. Significant diversity was observed in the first and second generation orchard seeds. Seed area, length, breadth and perimeter were highly significant in the second generation orchard seed lots than first generation orchard seeds
- Five new microsatellite loci sequences in *Acacia auriculiformis* were obtained and deposited in NCBI. The microsatellite markers studies estimated high outcrossing rates ($t_m = 0.98$) in both generation orchards.