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# Exploiting diversity of Leucaena leucocephala with reference to low lignin to improve its wood properties for better paper production

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Leucaena leucocephala (subabul) has succeeded as a preferred species for agroforestry and farm forestry interventions in India. It is a self pollinated, fast growing multipurpose leguminous tree. Introduction of L. leucocephala has been rather haphazard in the country. Several cultivars of L. leucocephala were planted, further selected and distributed by various institutions, organisations, paper and pulp industries in the country. However, to the best of our knowledge no systematic assessment of the existing biodiversity of L. leucocephala with respect to lignin content has been carried out in India. The study is aimed at identification of accessions of L. leucocephala species with low or altered lignin content with relevance to pulp and paper industry by exploiting the existing diversity in Andhra Pradesh, India. Selection of the candidate tree accession was based on low lignin phenotypic features like multiple branches, bent, crooked and wolf nature with low biomass. Out of 305 candidate accessions from which wood samples were collected and screened for lignin and holocellulose contents and fibre dimensions, 50 accessions were short listed based on lignin content falling in the range 19-25%. These accessions showed holocellulose content in the range 64-77%. Reduced content or altered quality of lignin and increased cellulose contents in the plant are desirable for producing better quality paper. The accessions ABT-KRS-BD-03, NGP-ONG-01, CHD-KHM-02, MPT-KHM-01, ABT-KRS-03 and CHD-KHM-03 were identified as the promising elite lines with low lignin (19.04-19.81%) and high holocellulose contents (72.63-77.04%).

## Biography

Merla S. Prashant has completed his Ph.D in 2010 at the age of 31 years from Department of Genetics, Osmania University, Hyderabad. He was awarded Dr. D. S. Kothari Postdoctoral Fellowship from University Grants Commission, New Delhi in 2011, pursuing postdoctoral studies at Center for Biotechnology, Jawaharlal Nehru Technological University Hyderabad, Hyderabad. He has published 8 papers in reputed national and international journals.

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