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Authentication of wood and Non-wood forest products through DNA barcodes

Suma Arun Dev
Kerala Forest Research Institute, Kerala, India

Forest resources in the Western Ghats of India are facing several threats including habitat destruction, forest fragmentation, regeneration problems, illegal and selective felling of commercially important trees as well as extraction of non-wood medicinal forest products. This has instigated a recent trend to adulterate/ substitute the existing resources to satisfy the demand of the growing industries. Adulteration/ substitution compromises the therapeutic value and are extremely difficult to authenticate using taxonomic tools. The ability to track and authenticate forest resources of economic value is thus critically essential for the effective management of the natural resources and appropriate regulation of the trade. *DNA barcoding,* as facilitated by the Consortium for the Barcode of Life (CBOL), *is the process of identification of a species using short conserved standard set of gene regions and is proposed to precisely identify species at all the lifecycle stages*. Developments over the last 10 years in the development of successful barcode even from dried and processed plant samples offer a promising molecular tool for the authentication of forest wood and non-wood forest produce and thereby to curb illegal and adulteration activities. In this paper, we demonstrate the potentialities of DNA barcodes to authenticate original timber speciesEast Indian sandalwood (*Santalum album*) and red sandalwood (*Pterocarpus santalinus*) as well as Ayurvedic raw drugs in the Western Ghats of India from their market adulterants/ substitutes.

Biography

Suma Arun Dev is a Senior Scientist at the Forest Genetics &Biotechnology Division of Kerala Forest Research Institute, Kerala, India Since 2010 onwards. She did her postdoctoral research at Indian Institute of Science, Bangalore, India in Molecular Population Genetics and is having 12 years of postdoctoral experience. Presently, her research is targeting on Conservation genetics of forest Genetic Resources, Developing genetic tools and DNA barcoding for the certification of wood and non-wood forest produce, transcriptomics for adaptive traits for productivity improvement. She has has published more than 35 papers in reputed journals, a member of many scientific bodies and has been serving as an editorial board member of Crop Genetics & Breeding, Biotropica, Food Biotechnology etc.