

Project Profile

- 1. Project No** : NFRP-149/2016-2019
- 2. Project (Title)** : Isolation and characterization of Cinnamoyl coA reductase in *Casuarina equisetifolia*
- 3. Principal investigator and other associates**
- PI** : Dr. A. Shanthi, Scientist-D
- Co PI** : Dr. Modhumita Dasgupta, Scientist-F
Dr. R. Yasodha, Scientist-G
Dr. Kannan Warriar, Scientist-F
- 4. Project approval date by**
- i) RAG : 25.10.2013.
- ii) RPC : 8.03.2014.
- iii) ICFRE : 1.04.2016
- 5. Date of commencement of the project:** 1.04.2016
- 6. Date of Completion of the project:** 31.03.2019
- 7. Total Budget of the project:** Rs. 16.71 Lakhs
(Released Budget-Rs.13.23 lakhs)
- 8. List of equipment procured under the project (with cost):-** Nil
- 9. Total expenditure on the project:** Rs. 12.22 Lakhs
- 10. Project summary:**

Abstract of significant findings

- Full length Cinnamoyl coA reductase gene was isolated through whole transcriptome sequencing study.
- The *de novo* assembly of raw transcriptome data showed the minimum and maximum transcript length ranged between 224 bp and 6627 bp with an average length of 609 bp and the N50 contig size was 780 bp.
- The raw paired - end sequence data was deposited in NCBI's Short Read Archive with the study accession number SRP136154.
- 26,985 unigenes were identified and 15,952 were annotated. Transcripts from *C. equisetifolia* showed highest similarity with *Prunus persica* (935), *Morus notabilis* (738), *Vitis vinifera* (663), *Citrus clementina*, *Jatropha curcas* (614), and *Populus trichocarpa* (587).
- A total of 2392 SSRs were identified from 2082 sequences, with 259 sequences containing more than 1 SSRs.
- The expression of nine major transcripts involved in lignin biosynthesis in secondary tissues was documented in four tissues and *CeCCR1* was found to show maximum expression in developing wood tissues.
- Sixty putative Single Nucleotide Polymorphisms (SNPs) were identified among the international provenances. The identified alleles can be used for identifying markers tagging wood property traits in *Casuarina equisetifolia*.